Cross Ambient Compensation . . . . . Pg. 16

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Worthington To Cool 2 of Largest Office Buildings

NEW YORK CITY — Worthington Corp. announced recently that it has received contracts to supply air conditioning equipment to two of the largest office buildings in the United States.

The awards, approximating $1.5 million total, call for furnishing nearly 15,000 tons of air conditioning.

The new buildings involved are the 59-story, 2.4 million sq ft Pan Am building in New York City, the world's largest commercial office building; and the Humble Oil & Refining Co. building in Houston, the tallest office building west of the Mississippi, Hobart C. Ramsey, Worthington board chairman, said at a press conference.

The $100,000,000 Pan Am building project is claimed to be the largest single commer-

(Continued on Page 4, Col. 1)

Imperial-Eastman Merger OK'd By Stockholders

NILES, Ill.—Shareholders of Imperial Brass Mfg. Co. here and Eastman Mfg. Co. of Manitowoc, Wis. have approved merger of the two companies, F. C. Shafer, chairman of the Imperial board, and W. C. Schuknecht, president of Eastman, announced recently.

The merger becomes effective Oct. 31 when the merged firm will be called Imperial-Eastman Corp. operating the Imperial Brass Div. and the Eastman Div.

Imperial Brass, founded in 1905, manufactures tube fittings and valves, service and repair parts, and tools for a number of industries including refrigeration and air conditioning.

For the refrigeration and air conditioning trade it manufactures tube fittings, tubing tools, service aids, shut-off valves, driers, liquid indicators, charging and testing units, and pressure and compound gauges.

Eastman, founded in 1914, manufactures fittings, hose assemblies, tube assemblies, and allied products, specializing in brass and steel fittings and assemblies for the transmission of fluids. It supplies the automotive industry with air conditioning lines.

Shafer will be chairman of the board for the new corporation and Schuknecht vice chairman. W. C. Musham, president of Imperial Brass, will be president of the new firm.

From Imperial Brass, C. H. Benson, G. J. Duerr, G. E. Franck, and F. W. Winter will

(Continued on Back Page, Col. 1)

4 Groups Plan Nov. Meetings

NWAHACA To 'Take Off the Gloves'

CLEVELAND—"We're going to come out swinging with ideas, information, and hard-hitting curb-stone facts at the 47th annual convention," declared Harry C. Gurney, president of the National Warm Air Heating & Air Conditioning Association.

"It's time," Gurney said, "for the industry to take off the gloves and become a little angry about its needs. In Cleveland, starting Nov. 14, it's going to be an intensive three-day dis-

(Continued on Page 19, Col. 1)

600 Expected at NHAW Convention

DETROIT — Record-breaking attendance of 600 for the 1960 international convention of Northamerican Heating & Air-conditioning Wholesalers Association is predicted on the basis of advance registrations.

The meeting will be held in Detroit Nov. 27-30 at the Statler-Hilton hotel. Theme of the convention will be "Profit by Management for Profit."

For the first time in the group's history, all booth space

(Continued on Page 4, Col. 3)

RACCA To Hear Management Talks

MIAMI BEACH, Fla.—A firm of management consultants specializing in the air conditioning and refrigeration contracting business will take over a sizable share of the program at the national convention of the Refrigeration & Air Conditioning Contractors Association to be held Nov. 19 through 22 at the Hotel Fontainebleau here.

Three members of the firm of Fails and Shepherd of Raleigh, N. C., will deliver six talks and answer questions from the floor during the last two days of the convention, according to Norman Jensen, managing director of RACCA.

Convention theme will be "Problems, Possibilities, and Opportunities in the Sixties."

Dr. Emol Fails, who is also executive secretary and director of research for the Heating & Air Conditioning Research & Development Association and a

(Continued on Page 4, Col. 3)

Credit—It Costs You Money

DETROIT—Some steps that heating and air conditioning contractors can take as individuals to improve the financial health of the construction industry were suggested recently by N. J. Biddle, secretary of the Detroit Heating & Air Conditioning Association.

Pointing out that whenever a contractor does not get paid for one of his jobs, the unpaid balance, no matter how much it may be, must be absorbed as an item of overhead.

He cited the following table to show how much extra business the contractor must do *without profit*, just to make up a $1,000 loss:

Average Net Profit	Added Volume Needed
5%	$ 20,000
4%	25,000
3%	33,300
2%	50,000
1%	100,000

"The table is intended to show the tremendous cost in money, time, and effort required to recover losses acquired by the granting of the credit

(Continued on Back Page, Col. 1)

Over 200 To Attend ARI Annual Meeting

WASHINGTON, D. C.—Well over 200 representatives of the manufacturing companies making up the membership of the Air-Conditioning & Refrigeration Institute will meet at the Hollywood Beach hotel, Hollywood, Fla., Nov. 18-22 for the institute's annual meeting.

Scheduled are meetings of ARI's Executive Committee and board of directors, meetings of nine ARI product-sections, and allied social events.

It will be ARI's first annual meeting in Florida, as well as its first such meeting in the fall. Prior to this year, meetings had been traditionally held in May, since the institute's fiscal year began on May 1. Last year, however, it was voted to make the ARI fiscal year run con-

(Continued on Page 4, Col. 5)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

In Whose Kitchen Did Nixon Diddle Nikki?

Friends at the Whirlpool Corp. of St. Joseph, Mich., are anxious to set the record straight as to the scene of that "kitchen debate" between Richard Nixon and Nikita Krushchev.

That much-publicized argument did not take place, as commonly assumed, in the RCA Whirlpool Kitchen which was on display at the American National Exhibition in Moscow.

It was earlier, according to Whirlpool's Juel Ranum, that Nixon and Krushchev visited the RCA exhibit, where they were embroiled in a different kind of argument.

This one began with a critical remark of Krushchev's about the self-guided electronic floor cleaner which scoots out of a niche in the wall, scurries around on a pre-arranged pattern to clean up floor dirt, and returns to its undercounter "garage" to empty and recharge itself for the next trip.

Although Krushchev was complimentary about the electronic elevator ovens, the traveling self-operated dishwasher, and other automatic devices in the futuristic kitchen, he insisted that cleaning floors is a job that women should do with brooms.

Nixon replied that, while he and Krushchev disagreed on many things, he thought any government should do all it can to relieve human drudgery.

After a moment's thought, Krushchev threw up his hands, smiled and agreed.

The same kitchen of the future which provoked Mr. Krushchev's remark has been on display in Europe most of this past summer.

It was demonstrated to nearly 450,000 people in Poznan, Poland, during the 12-day International Trade Fair in July, and was seen in September by some

(Continued on Page 11, Col. 1)

More Than 500 Exhibitors Signed for 15th Heating & Air Conditioning Show

CHICAGO — More than 500 exhibits are scheduled for the 15th International Heating & Air-Conditioning Exposition to be staged Feb. 13-16, 1961, at Chicago's International Amphitheatre.

This was reported by the exposition management, which said there has been an unprecedented demand for exhibit space.

Sponsored by the American Society of Heating, Refrigerating & Air-Conditioning Engineers, and in conjunction with the society's national meeting in Chicago, the exposition will cover every phase of the heating, refrigeration, air conditioning, and ventilation industry.

Anticipating a greatly-increased attendance at the ASHRAE meetings and the exposition, over 6,000 hotel rooms have been set aside at leading Chicago hotels, the announcement said. A world-wide attendance, breaking all records for registration of visitors, is expected.

Walter A. Grant, president of ASHRAE, is chairman of the advisory committee for the exposition. Membership on the committee of 33 includes members of the board of directors and presidents of local chapters of ASHRAE. The heads of associations representing major interests in the fields of heating, refrigeration, ventilation, and air conditioning also are included.

E. K. Stevens, president of the International Exposition Co., with permanent headquarters at 480 Lexington Ave., New York 17, N. Y., is manager of the exposition.

Production Resumed As G-E Strike Ends

LOUISVILLE, Ky. — Production has resumed at General Electric Co.'s air conditioning plant at Tyler, Texas and major appliance plant here, following settlement of a three-weeks' strike by members of the International Union of Electrical Workers.

Return to work was delayed for a day at Appliance Park until the company had signed a contract with the independent Kentucky Skilled Craft Guild representing tool and die men.

Westinghouse Improves '61 Room Units

A SERIES of basic design changes have been made in the 1961 Westinghouse room air conditioners. Some are displayed here by J. P. Moffitt, manager of the room air conditioner department, comparing 1960 with 1961 models. At left, are four evaporators where prime cooling surface in the 1961 models (second and fourth from left) has been increased up to 183%. The blower in his right hand is from a 1960 model while the one in the left hand is 1961. The air velocity has doubled through the use of the larger wheels. To Moffitt's left are two motors, the 1960 hexagonal open-coil type on the left and the new completely sealed motor for 1961 on the right.

ARI Publishes New Standards for Compressors, Condensing Units

WASHINGTON, D. C. — Two new standards for air conditioning and refrigeration compressors and condensing units have been published by the Air-Conditioning & Refrigeration Institute, replacing six old standards.

The new publications are ARI Standard 516-60, titled "Refrigerant 12 and Refrigerant 22 Compressors and Condensing Units, 25 Horsepower and Larger," and ARI Standard 511, "Ammonia Compressors and Compressor Units."

Standard 516 was designed to replace Standard 5-21 (" 'Freon' Compressor Units, 25 Horsepower and Larger") and 5-22 (" 'Freon' Condensing Units, 25 Horsepower and Larger").

The standard applies to Refrigerant-12 or Refrigerant-22 water-cooled condensing units or compressor units, 25 hp or larger, incorporating open or sealed reciprocating compressors, and is also applicable to the use of R-500 if used.

Standard 511 will replace Standards 5-12 (Enclosed Ammonia Compressors, Vertical Single-Acting Type), 5-13 (Performance of Ammonia Compressors, Vertical Single-Acting Type), 5-14 (Standard Equipment for Ammonia Condensing Units), and 5-15 (High-Speed Ammonia Compressors).

The standard applies to enclosed, single-acting, reciprocating ammonia compressors and compressor units, both valve-in-piston and valves-in-head types.

Publication of the two new standards, ARI said, discontinues the six standards which they replace — Standards 5-12, 5-13, 5-14, 5-15, 5-21, and 5-22.

Each is priced at 50 cents, and may be obtained from ARI, 1346 Connecticut Ave., N.W., Washington 6, D. C.

Silver Shield Moves Ahead In 5 Areas

Kalamazoo Group Honors Builder

KALAMAZOO, Mich. — Kalamazoo heating men took a giant step forward recently when they presented a Silver Shield certificate to David Satin, noted builder and real estate operator, certifying the comfort conditions of the first home in his new development, Arcadia.

The presentation was made in a formal ceremony witnessed by Howard Fenstemaker, building page editor of the *Kalamazoo Gazette;* Robert A. La Chance, assistant director of public relations for the National Warm Air Heating & Air Conditioning Association; and officers and members of the Kalamazoo Indoor Comfort Bureau.

Making the presentation was Harold Guernsey, president of the bureau, who told Satin that his "long standing reputation for building quality homes had taken on a new dimension with the inclusion of a guaranteed comfort Silver Shield System for the purchasers."

The certificated home, located at 949 Boswell, is one of 600 homes to be built by Satin that will have Silver Shield heating systems installed by Glen W. Rynbrand Heating Co.

Memphis Bureau Licensed Oct. 12

MEMPHIS—Within 24 hours after being licensed as the nation's tenth Indoor Comfort Bureau, the new Memphis bureau had before it the first application for a label by one of its members for the sale of a Silver Shield heating and cooling system.

Licensing of the second bureau in Tennessee occurred on Oct. 12 at the Imperial Restaurant with some 100 industry members in attendance.

Presentation of the license was made by James M. Martin, managing director of the National Warm Air Heating & Air Conditioning Association to R. B. Buckingham, president of the bureau.

Also participating in the program was James Wood, president of the Memphis Home Builders Association who hailed the efforts of the new group in achieving unity by building a strong local organization.

Presenting certificates of achievement to 34 individuals who successfully completed the Silver Shield technical training school was Fred M. Niell, manager of heating and air conditioning engineering department, Memphis Light, Gas & Water Div.

Kokomo, Gary Form Action Committees

CLEVELAND — Two more cities—Kokomo and Gary, Ind. —have named Silver Shield Action Committees to pursue the nationwide upgrading program of the National Warm Air Heating & Air Conditioning Association.

Dealer-contractors in Kokomo named Bud Small, president of Small's Heating & Plumbing Co., to head their inquiry committee after hearing details of the Silver Shield Program, Monday evening, Sept. 12.

Gary has named a joint committee, headed by Charles H. Novatny, John Novatny & Son, and Glenn O. Nallinger, Apex Heating Shop, Inc., to study the Silver Shield Program.

Serving with the Gary group will be Ralph J. Potesta, executive secretary of the Lake County Sheet Metal & Warm Air Heating Contractors Assn.

Western N. Y. Holds Licensing Dinner

BUFFALO—William E. Miller, congressman from New York's 40th Congressional District, and Anthony Manguse, corporation counsel for the City of Buffalo, were scheduled to be the principal speakers at the Silver Shield banquet, held at the Statler-Hilton hotel here Oct. 26.

More than 500 diners were expected to participate in the festivities, staged in honor of the licensing of the Indoor Comfort Bureau of Western New York. This bureau is licensed under the sponsorship of the National Warm Air Heating & Air Conditioning Association.

Approximately 50 heating men from the Buffalo area received certificates of eligibility during the ceremonies.

Harry C. Gurney, general sales manager for Janitrol Heating & Air Conditioning, a division of Midland-Ross Corp., and president of NWAHACA, outlined the aims, purpose, and concept of the Silver Shield movement and presented the license to the bureau's president, Clifton Newell.

Officers of the newly-formed and licensed bureau are Clifton D. Newell, head of General Gas Equipment in Kenmore, N Y., president; George Adema, N. M. Adema & Son, vice president; Bert Weigel, Rundell & Weigel, secretary; and Alvah D. Ehrman, Ehrman's Plumbing & Heating, Inc., treasurer.

West Virginia Gets First Bureau

STEUBENVILLE, Ohio — Formation of the first Silver Shield Indoor Comfort Bureau in West Virginia took place when a group of heating and air conditioning men from Steubenville and Weirton, W. Va. organized to upgrade the industry in their area.

Leading forces in the movement in the tri-state area are David Bert Sligar, of Schinnerlein & Sligar, who is president pro tem; Max Flinn, of E. Flinn & Son, vice president; and William Hawkins, of Hawkins Heating Co., secretary and treasurer.

A 12-week technical training course, to be taken at Steubenville college, is to be an essential part of the development of the new bureau's membership.

Those making passing grades will be eligible for certificates. Twenty have enrolled for the course.

Licensing of this bureau will take place after the membership has completed its technical training course, a state charter granted and codes and standards meeting the NWAHACA's requirements are received and approved.

Also on the "planning board" for this new group is the Silver Shield sales training course following the licensing of the bureau.

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KRACK REACH-IN PRODUCT COOLERS occupy much less space. Smartly styled embossed aluminum housing • Six models from 110 to 8600 BTU/Hr. • Electro tin plated copper tubes • Permanently lubricated motor with overload protection • "Knock-outs" for ceiling or back wall installation.

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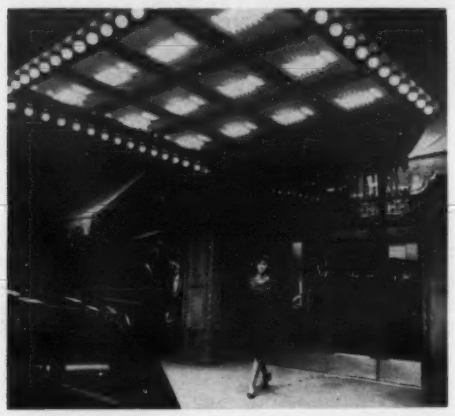


LUXURY of summer sunshine even during the coldest winter months is provided for its customers by Saks Fifth Avenue, leading New York department store. General Electric's unique quartz infrared lamps, mounted under 49th and 50th St. marquees, provide a warm, light, and dry atmosphere for store patrons as they walk between their cars and the store entrances. The installation is claimed to be the first of its kind in the nation.

NEW YORK CITY—A "warm reception" is promised customers of Saks Fifth Avenue, one of New York's leading department stores, during the chilly months of the year.

The welcome luxury of "summer sunshine" will be provided by a heating-lighting system installed under the marquees at the store's Forty-ninth St. and Fiftieth St. entrances. The system was to be in operation with the arrival of fall's first chilly weather.

In addition to giving warmth and light, the system will benefit patrons by keeping sidewalks dry, eliminating the accumulation of snow and ice, and evaporating puddles of water. In so doing it will improve pedestrian safety and create a cleaner, more inviting entrance area.

Featuring General Electric's unique tubular quartz infrared lamps, which "heat like the sun" with radiant energy, the installation is the first in the nation for department store marquees, according to G-E.

"Radiant heat striking pedestrians at a distance of 5 ft above the sidewalk amounts to about 90 watts per sq ft, or the equivalent of the heat provided by sunlight on a warm summer day," G-E said. "Light produced by the lamps amounts to 750 footcandles at the same height, or about two times the amount prevailing in the best-lighted business office.

"Twenty-four 1,000-watt G-E lamps are used under the roof of each marquee, 15 ft above the sidewalk. Each lamp is 13 in. long, and only ⅜ in. in diameter. The lamps are quite safe in that quartz tubing will not break if turned on when coated with water or even ice. The water and ice will simply evaporate.

"The lamps are housed in efficient two-lamp reflector fixtures designed for the Saks project by Luminator, Inc. of Chicago. The units are louvered, and control the light and radiant energy accurately. Forty-five degree shielding provides visual comfort.

"The Saks system represents a new concept in infrared electrical heating. Fixtures project heat in the same manner as light is projected. The warmth from infrared rays can be compared with that of the sun's rays when a person steps from shade into sunlight on a cool day. The effect is felt immediately.

"The 'comfort' heating of people in out-of-doors and other exposed locations is a new and growing use for G-E's source of heat and light. Typical installations find them mounted over store show windows, over spectators at a race track grandstand, over hotel entrances, near work stations in unheated factories, and at railroad waiting platforms."

LOOKING OVER tentative floor plans for the Air-Conditioning & Refrigeration Institute Exhibit and Conference scheduled for Feb. 12-15, 1962 in Los Angeles are: (l. to r.) William P. Tennity, president, Western Air Conditioning Industries Association; Hy Jarvis, president Recold Corp. and ARI general show chairman, and Arthur J. Hess, WAC's vice president. Members of WAC will act as hosts at the 12th Exposition.

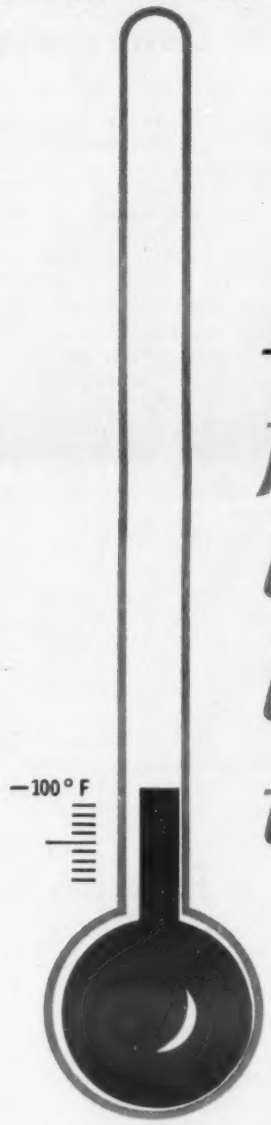
New Worthington Post Goes to Frank Nunlist

NEW YORK CITY—Frank J. Nunlist has been appointed to the new position of vice president - operations, Worthington Corp., it was announced by Hobart S. Ramsey, chairman.

F. J. Nunlist

Formerly a group vice president of Worthington, Nunlist will be responsible for the activities of all the company's 16 domestic operating divisions in ten states and regional engineering and service activities. He will report to Walther H. Feldmann, president.

Nunlist first became associated with Worthington when the company acquired the L. J. Mueller Furnace Co. of Milwaukee in 1954. Subsequently he became executive vice president of Worthington's Mueller Climatrol Div. He was elected a group vice president of Worthington in 1958.



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Better Things for Better Living . . . through Chemistry

HOBART C. RAMSEY, left, chairman, Worthington Corp., shows Erwin S. Wolfson, builder of the $100 million Pan Am building, a giant refrigeration unit of the type to be used to air condition the new building. Worthington will supply a total of 10,000 tons of refrigeration. Three 3,333-ton turbine driven centrifugal units as shown in the photograph held by Ramsey, will be hoisted to the top of the 59-story building.

Worthington Office Building Jobs--

(Continued from Page 1, Col. 1)

cial office building air conditioning installation in history. Worthington will supply a total of 10,000 tons of refrigeration for the air conditioning system using three 3,333-ton steam turbine driven centrifugal refrigeration units.

The Humble Oil & Refining Co. office building, a 44-story rectangular structure, will be constructed in downtown Houston and will contain approximately 1,000,000 sq ft of usable space, of which 600,000 sq ft will be occupied by Humble Oil & Refining.

Worthington air conditioning for the new Humble building will be supplied by four steam turbine driven 1,050-ton units having a total capacity of 4,200 tons.

"Air is delivered to unique recessed outlets by some 27 large air handling units," it was stated. "Approximately 60 centrifugal fans and 267 cooling and heating coils comprise the balance of the air handling system."

Sam P. Wallace & Co., Inc., Dallas, is mechanical contractor for the new Humble building.

Steel work on the Humble building has reached the 20th floor, with construction expected to be completed by mid-1962. Welton Becket & Associates, New York City and Los Angeles architectural firm, is the architect and engineer for the building, and W. S. Bellows Construction Corp. is the general contractor.

"To accomplish maximum use of space and flexibility at a low cost, Welton Becket & Associates established a building module which would serve to organize the lighting, air conditioning, electrical services, and movable partition into a flexible yet orderly and unified system," it was pointed out.

"A module or grid of 4 ft 8 in. in each direction was developed and serves as the basic 'building block' of the structure. Each 4-ft 8-in. module is, in effect, a self-sustained unit with its own lighting, electrical and telephone connections, and access to air conditioning."

Construction is under way on the Pan Am building and is scheduled for completion in 1962.

"The unique air conditioning installation will employ distinctive methods for cooling perimeter and interior areas," the announcement said. "It is embodied in a $10,000,000 mechanical contract let to the Raisler Corp. by Diesel Constructing Co., general contractor for the 59-story skyscraper."

According to Erwin S. Wolfson, who heads the group erecting the $100 million tower to rise on the 3½-acre site at the rear of the Grand Central Terminal, the Pan Am building's air conditioning, heating, and ventilating system will depart quite dramatically from conventional office building installations.

Jaros, Baum & Bolles, consulting engineer, has designed the installation so that built-in flexibility, planned to meet requirements of individual tenants, will allow the tenant to enjoy air conditioning after normal work hours; will cope with special business operations such as communications facilities; and will adjust to such other peculiar office needs as heavy business machines and electronic processing equipment rooms.

The octagonal shape of the building with its eight separate exterior exposures has also prompted unusual treatment of periphery areas conditioned by an air induction system zoned both vertically and horizontally utilizing some 5,000 induction circulators furnished by Worthington.

Approximately 5,000,000 cfm will be circulated in normal operation of the building air conditioning system.

The refrigeration equipment in the Humble job will be located on the roof of the 8-story parking garage which is being constructed alongside the main office building with access through an air conditioned connecting tunnel.

The Pan Am building equipment room will be located on the roof of this 59-story structure. This has been necessitated because the building will rise directly over the tracks and station platforms of the New York Central and New Haven railroads.

The refrigeration equipment weighing 100 tons will be raised aloft 775 ft to the roof. This is the greatest weight concentration ever to be hoisted to such heights, according to Worthington.

NHAW Convention Plans--

(Continued from Page 1, Col. 4)

available for the popular business conference sessions between wholesalers and executives of the manufacturing suppliers was sold out nearly two months in advance, according to Wilbur R. Bull, executive director.

An innovation in the form of a workshop panel session for the ladies has been announced by Blaine Lytle, convention chairman. "Problems of the Heating and Air Conditioning Executive's Wife" will be discussed Monday afternoon, Nov. 28, under the leadership of a nationally-recognized authority, Dr. Katherine B. Green, Wayne county marriage counsellor.

The convention will get under way Sunday, Nov. 27, with a board of trustees luncheon and meeting, and a "Gay Nineties" party will be held that evening.

Regular committee meetings are slated for Monday morning, followed by a luncheon featuring Ralph Compton, vice president, government relations, National Association of Manufacturers.

"Cutting Costs and Increasing Profits" is the subject of a workshop panel session Monday afternoon to be moderated by John Robertson, past president.

General membership breakfast and meeting will be held Tuesday morning. Following reports by officers and committee chairmen, new officers and trustees will be elected.

Business conference program will run from 11:30 a.m. to 4:30 p.m., including a buffet luncheon, and the day's activities will be topped off by a reception and the annual banquet.

On Wednesday, the final day, there will be a "brainstorming session" from 9 to 10:25 a.m. on the subject "How to Build a Better Dealer Organization" and a group conference from 10:30 to 11:45 on "How to Develop and Maintain High Morale and Continuing Enthusiasm Among Your Employes."

Milt Elert of Michigan Consolidated Gas Co. will speak at Wednesday's luncheon.

ARI Meeting--

(Continued from Page 1, Col. 5)

currently with the calendar year, and to hold the annual meeting during the 60 days preceding the beginning of the new year.

Primary business of this year's meeting will be election of new officers and the approval of ARI activities, and budget, for the calendar-fiscal year 1961. There will be no speaking program, as in former years.

The several sessions will open with a dinner on Thursday evening, Nov. 17, of ARI's newly-formed Systems Group, to be followed on Friday by a meeting of the board of directors.

The annual meeting proper is scheduled for Saturday morning, Nov. 19, with provision that it may be continued over to Sunday morning if all items of business on the agenda are not completed Saturday.

On Sunday, the ARI golf tournament will be held on the Hollywood Beach Golf Club Course. There will be 18-hole events for both ladies and men, as well as a 9-hole tourney for the ladies.

Representatives of member companies will compete for the Jim Emmett Cup, a trophy awarded annually in memory of one of ARI's early presidents. In addition, members and guests will be eligible to compete for a score of other prizes.

Five product-sections will meet on Monday morning, another on Monday afternoon, and three more on Tuesday morning, Nov. 22.

Scheduled for Monday morning are the Heat Transfer, Reciprocating Compressor and Condenser Units, Temperature Controls, Unitary Air-Conditioner, and Valves, Driers, Fittings and Accessories Sections. The Centrifugal Liquid-Chilling Packages Section will meet Monday afternoon, and meetings will be held of the Flow Control Valves; Refrigerants, Lubricating Oils and Chemicals, and Tubular Products-Sections on Tuesday morning.

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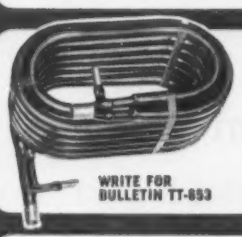
WRITE FOR BULLETIN AV-4



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Domestic and sea water models

Reduce costs 40% . . . Reduce condenser water 35% . . . Reduce refrigerant charge . . . Stabilize capillary performance . . . Compact shapes.

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MOTORIZED VALVES

For chilled water cooling systems and for heating systems . . . 100% positive shut-off . . . Compact . . . Low cost . . . Low Voltage . . . No current draw when open.

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938-8 Alexander Ave., Pompton Plains, N. J.

TEmple 5-2808

"One of the nation's largest manufacturers of Residential and Commercial Boilers, Baseboard and Steel-Fin Radiation, Motorized Valves, Air and Water-Cooled Refrigerant Condensers."

RACCA Program for Miami--

(Continued from Page 1, Col. 5)

professor in salesmanship, economics, and accounting at North Carolina State college, will forecast what to expect during the next decade and discuss how to take advantage of the opportunities. He will also cover all phases of employe-management relations.

D. S. Shepherd, who is also on the board of directors and treasurer of Heating & Air Conditioning Research & Development Association, will cover records and pricing and provide answers to the question "How Productive Is Productive Labor?"

H. H. Ziglar, specialist in sales training and development, will disclose how to gear the individual to realize his potential and prepare for the opportunities of the Sixties and analyze how to build satisfied customers by selling the benefits of air conditioning.

Other convention speakers are Dr. M. H. Shahani of Bombay, India who will relate "Some Impressions of the Air Conditioning Contracting Business In the U.S.A."; A. L. Inglefinger, chief of the environmental control section, flight accessories laboratory, Wright-Patterson Air Force Base, Dayton, Ohio, who will talk on opportunities for air conditioning, refrigeration, and humidity control contractors in military and government contracting; and L. L. Grant, president of Hill-York Service Corp., who will discuss "Maintenance Contracts—Door to the 60's."

Also expected to address the convention are the presidents of the National Association of Plumbing Contractors, the Mechanical Contractors Association of America, the Air-Conditioning & Refrigeration Institute, the Air Conditioning & Refrigeration Wholesalers, and the United Association.

Convention registration is priced at $55 for men and $35 for ladies. This covers a reception and cocktail party Saturday night, a men's luncheon and a Polynesian Luau Sunday, and the annual banquet Monday evening. For the ladies, it also includes a "Coffee Fashionette" Monday morning.

Advance registrations can be made through Convention Chairman Dudley M. Cawthon at 1390 N.W. 43rd St., Miami, Fla.

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air conditioning

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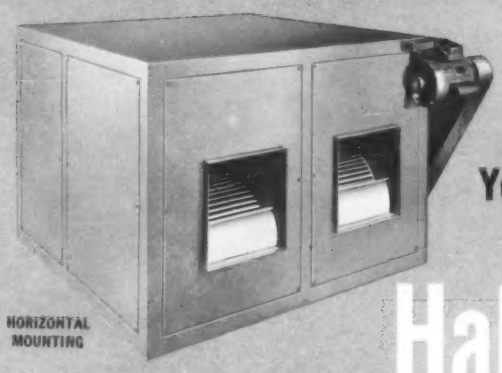

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CLIP THIS FOR YOUR FILES

You get more versatility in these new

Halstead & Mitchell central system air conditioners

that are built to last!

VERTICAL MOUNTING

YOU CAN COOL AND DEHUMIDIFY, HEAT AND HUMIDIFY, FILTER AND CIRCULATE AIR FROM THESE COMPACT H&M CENTRAL SYSTEM AIR CONDITIONERS.

AVAILABLE IN 3 TO 92 NOMINAL TONS AND WITH MATCHING HEATING COILS.

LOOK AT THE CHOICES YOU GET:

1. **H&M Turbu-Flo coils** with right or left-hand connections.
   Direct Expansion Cooling Coils *Chilled Water Cooling Coils*
   Non-Freeze Steam Heating Coils *Hot Water Heating Coils*
   Standard Steam Heating Coils
2. **Capacities of 3 to 92 nominal tons** with 880 to 47,750 CFM.
3. **Cooling coils of 1 to 8 rows; heating coils of 1 or 2 rows.**
4. **3 choices of coil face areas** for each model.
5. **Fin spacings of 6, 7, 8 or 10 fins per inch.**
6. **Horizontal or vertical mounting**; discharge in any direction.
7. **Variable Pitch drives on most units** for close adjustment of air quantities.
8. **Face and bypass dampers** to provide desired leaving air conditions.
9. **Mixing boxes** (with or without dampers) to control proportioning of ventilation and return air.
10. **High or low velocity filter sections** use throw away or cleanable type filters.
11. **Spray or steam grid humidifiers** for proper addition of moisture.

HERE'S WHY THESE H&M UNITS WILL ALWAYS GIVE TOP PERFORMANCE:

1. **Formed corner posts** of heavy gauge steel provide a rugged frame.
2. **Flush-mounted panels** look better, are easily removable for quick servicing.
3. **Fully insulated cabinets** assure quiet operation; are attractively finished.
4. **Permanently sealed ball bearings** on fans require no lubrication or servicing.
5. **Double width, double inlet centrifugal fans** handle large air quantities against static pressures up to 2 inches water column. Fans are statically and dynamically balanced for quiet running.
6. **Heavy duty fan motors** are standard NEMA frame sizes and are positively mounted on adjustable bases.
7. **Sound-dampening vibration isolators** are available for all units.
8. **Halstead & Mitchell Turbu-Flo coils** have an exclusive streamline fin pattern for better heat transfer.

HM

Halstead & Mitchell

Central System Air Conditioners • Cooling Towers
Air-Cooled Condensers • Water-Cooled Condensers • Finned Coils

CONDENSED DATA ON

H&M CENTRAL SYSTEM AIR CONDITIONERS

MODEL NO.	NOMINAL TONS*	BASIC CFM (at 500 FPM)	CFM RANGE† (400 TO 700 FPM) LOW TO HIGH	NO. OF BLOWERS	FACE AREA, Sq. Ft. STD.	MED.	LARGE
11 AH 2	3.0	1,100	800 to 1540	1	2.2	2.4	3.0
15 AH 3	4.0	1,500	1200 to 2100	1	3.0	3.3	3.9
21 AH 4	5.5	2,100	1680 to 2940	1	4.1	4.5	5.1
31 AH 6	8.1	3.100	2480 to 4340	1	6.0	6.3	7.2
36 AH 7	9.7	3,600	2880 to 5040	1	7.3	8.2	9.2
47 AH 9	12.7	4,700	3760 to 6575	2	9.4	10.1	11,3
62 AH 13	16.9	6,250	5000 to 8750	2	12.5	13.3	14.5
79 AH 16	21.4	7,900	6325 to 11100	2	15.8	18.8	20.2
108 AH 22	29.4	10,800	8700 to 15500	2	21.8	24.0	25.6
118 AH 24	31.7	11,850	9500 to 16600	2	23.7	27.4	29.3
146 AH 29	39.4	14,600	11657 to 20200	2	29.2	32.0	34.0
177 AH 35	47.8	17,700	14150 to 24800	2	35.4	38.3	40.3
238 AH 48	64.2	23,800	19000 to 33200	2	47.5	49.0	51.4
290 AH 58	78.4	29,000	23200 to 40500	2	57.9	61.0	63.8
340 AH 68	91.8	34,000	27200 to 47750	3	68.0	75.7	78.5

*Nominal Tons are based on Entering Air conditions of 80° D.B., 67° W.B.; Leaving air conditions of 60.2° D.B., 56.8° W.B.; 4-row coil; 500 FPM face velocity; 40° refrigerant temperature; standard coil face area with 7 fins per inch. For capacities with other coil sizes or fin spacings, refer to Bulletin AHU-100.

†For standard coil face area.

MODEL NO. CODE

11 H AH 2

- 2 sq. ft. of face area
- Air Handler
- Horizontal Cabinet (V for Vertical)
- 1100 CFM @ 500 FPM at standard conditions

EXAMPLE of capacity range:

Model 47AH9 at standard air and refrigerant conditions

CFM ranges from 3,760 to 6,780. Face areas available are 9.4, 10.1, 11.3 sq. ft.

Cooling coil depth from 3 to 8 rows; heating coil depth, 1 or 2 rows. Fin spacing of 6, 7, 8 or 10 fins per inch.

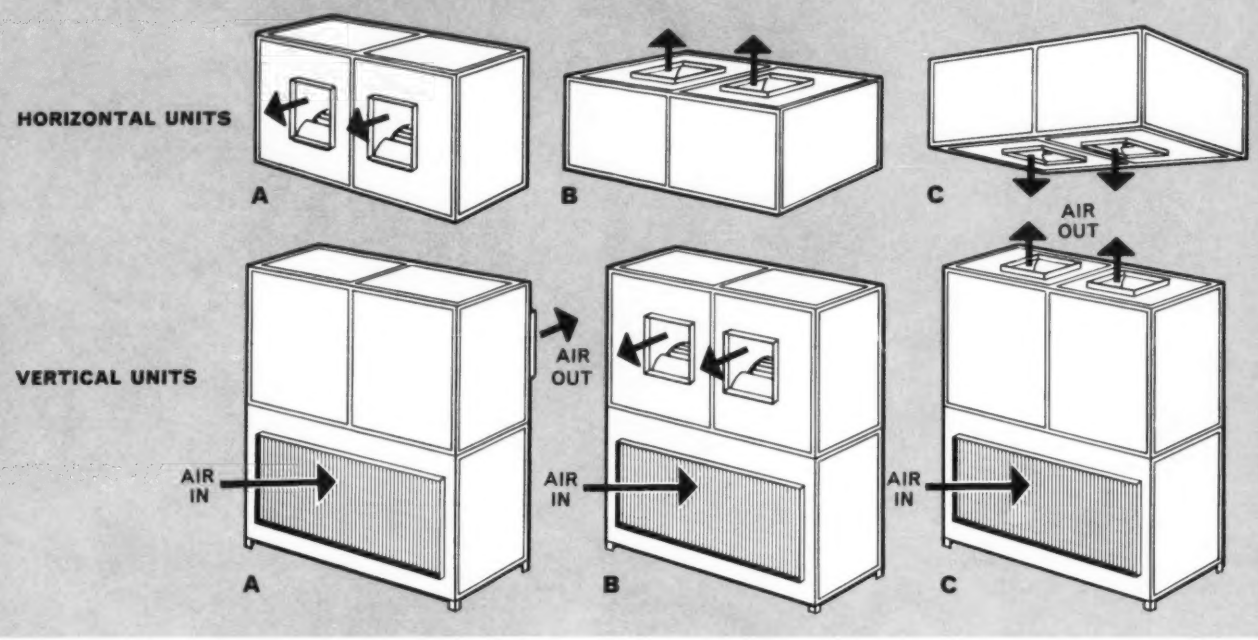
Minimum capacity is 8.93 tons

Based on 400 FPM, 3,760 CFM, 3-row cooling coil, 6 fins per inch, 9.4 sq. ft. face area.

Maximum capacity is 28.1 tons

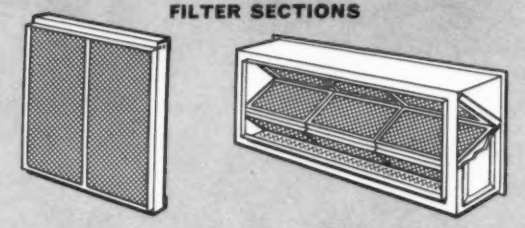
Based on 600 FPM, 6,780 CFM, 8-row cooling coil, 10 fins per inch, 11.3 sq. ft. face area.

CHOOSE THE MOUNTING ARRANGEMENT YOU WANT:



CHOOSE THE ACCESSORIES YOU NEED:

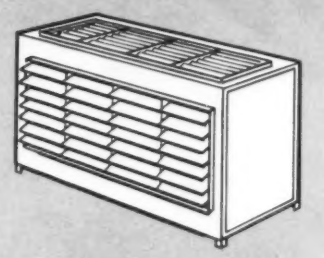
FILTER SECTIONS



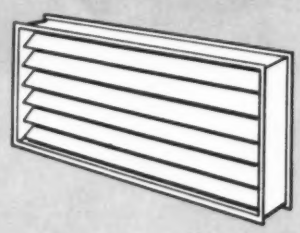
HIGH VELOCITY LOW VELOCITY

(throw away or cleanable filters may be used with either type section)

MIXING BOXES



FACE and BYPASS DAMPERS



BULLETIN AHU-100 CONTAINS COMPLETE PRODUCT INFORMATION. WRITE FOR A COPY AND FOR PRICES

HALSTEAD & MITCHELL CO. • BESSEMER BLDG. • PITTSBURGH 22, PA.

J-0531 Litho in U.S.A.

ONE OF THE FEATURES of the Oct. 10 and 11 Typhoon sales conference was a series of "clinics" designed to assist distributors plan finance, service, and advertising programs for their local market. Norman Reitman, Typhoon advertising manager, reported a heavy "patient" load at the advertising clinic as distributors examined the plans for the $200,000 local level promotion drive. Report on conference was published in the Oct. 24 NEWS.

Hussmann Offers 3 Basic Types of Multi-Shelf Produce Cases

ST. LOUIS—Three different basic types of multi-shelf produce merchandising equipment has been announced by Hussmann Refrigeration, Inc.

These three types include a case with a 24-in. high merchandising front (model HDV), another case with a 34-in. high merchandising front (model HMV), and an air curtain display cooler for produce (model HACV).

"An unusual feature of all three models is that the store operator makes his own selection of the type of upper, adjustable display shelves and/or wire display baskets from a wide choice of sizes and types available to him," the company said.

"All display shelves and wire display baskets are in 4-ft sections, and are individually adjustable upwards or downwards on 2-in. increments.

"The equipment can be set up as 2, 3, or even as 4-deck merchandisers, depending on the type of case and merchandising accessories chosen by the store operator.

"These multi-shelf produce merchandisers provide from 50% to 100% more square feet of refrigerated shelf area per linear foot of case as compared to single deck equipment. They also provide from two to three times more front produce facings to display greater variety in less floor space."

Arkla Promotes Dr. Anderson

LITTLE ROCK, Ark. — Dr. Philip Anderson of Evansville, Ind., has been elected vice president in charge of research and development for Arkla Air Conditioning Corp., at its Evansville plant, it was announced by W. R. Stephens, Arkla president.

Dr. Anderson

Dr. Anderson has been serving as chief engineer for Arkla in its research and development program since rejoining the firm a year ago. He succeeds R. K. Eskew.

Dr. Anderson is widely known in the field of gas air conditioning development and engineering, having served in various capacities with Servel, Inc., in Evansville, from 1936 through 1956, it was noted. He is credited with nearly a score of patents which have contributed to the improvement and development of gas refrigeration and year-round air conditioning.

Eskew Appointed By Bryant Mfg.

INDIANAPOLIS — The appointment of Robert K. Eskew as vice president and director of engineering of Bryant Mfg. Co. has been announced by Samuel F. Shawhan, president.

R. K. Eskew

Eskew comes to Bryant from the Arkla Air Conditioning Corp. in Evansville, Ind., where he was vice president and director of engineering.

Prior to that he had been, since 1928, associated with Servel, Inc., where he held important positions in sales, manufacturing, and field engineering, according to the announcement.

When Arkla purchased the air conditioning division of Servel in 1957, Eskew served in a consulting capacity with Arkla before going to Houston, Texas, to become president of York-Houston, a wholly owned subsidiary of York Corp.

"Eskew is noted as one of the nation's pioneers in the development of absorption systems for year-round air conditioning," the announcement said. "Bryant Mfg. Co. also pioneered in this field, having introduced its gas-fired air conditioner several years ago."

Embezzler Starts 5 to 7 Year Term

PHOENIX, Ariz. — Byron Maddox, 36, former office manager and accountant at the headquarters here of Arizona Refrigeration Supplies, Inc., was sentenced by Superior Court Judge Lorna Lockwood to a five-to-seven-year term in prison after being tried for embezzlement.

Maddox was said to have admitted embezzling $136,000 over a period of six and a half years. None of the money was recovered despite a painstaking, month-long search by fiscal experts and detectives, it was reported.

The probation officer reported that Maddox admitted spending over $600 a month on entertainment and lavish living with purchases of expensive clothes and automobiles.

Maddox' attorney asked the court for leniency but Judge Lockwood, on imposing the sentence, commented that "society must be protected."

As reported last January by the NEWS, Maddox had waived a hearing on the embezzlement charges. The matter came to light when a business consultant checked into Maddox' work.

At that time, William W. Miessemer, president of the firm, told the NEWS: "This shortage occurred through a manipulation of 'daily cash receipts' and by the accountant writing checks for 'cash' and pocketing the money. The pocketing of the money was covered up by charging these funds to 'purchases' through a journal entry."

The company is a wholesaler of air conditioning and refrigeration parts and supplies with branches in Tuscon and Yuma.

York's Dairy Show Exhibit To Stress Firm's Experience

YORK, Pa. — "Our Experience—Your Insurance" will be the theme of the exhibit sponsored by the York Div. of Borg-Warner Corp. at the Dairy Industries Exposition in Chicago from Oct. 31 through Nov. 5, the company announced.

Located in booth R-222 at the International Amphiteatre, the York display will include a truck refrigeration unit installed in a typical milk delivery truck, 2⅝ by 2¼-in. hermetic compressor and condensing units, "Flex-O-Metic" Condensing Units, a transparent operating refrigeration system that may be controlled by convention visitors, and other York equipment.

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REVIEW of VACUUM for SERVICE ENGINEERS by Saunders & Williams

NEW!

A comprehensive STORY OF VACUUM written specially for SERVICE ENGINEERS!

Contents: Atmosphere and its pressure • Meaning of vacuum; how created, used and measured • High vacuum pumps and their care • Vacuum line size and their effect • Procedure for dehydrating, degassing and leak detection • High vacuum gages • Precision charging.

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Gentlemen: Enclosed is my check or money order for ☐ copies of the "Review of Vacuum" at $4.00 per copy postpaid in the U.S.A. Shipment is to be made immediately.

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EDGEMOUNTED LATCH

Latch has roller bolt action. Similar action in other latches has been field tested for the last twenty years. It assures easy opening and positive closing . . . using nylon roller for quiet operation. Latch mounts on either right or left hand doors. Available with or without key locking. Surface-mounted strike is adjustable two ways.

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INDUSTRIAL HARDWARE DIVISION • ROCKFORD, ILLINOIS

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Corner the Market

NEW! "CORNER THE MARKET" CAMPAIGN!

Outstanding travel and merchandise awards for you and your salesmen . . . Hawaii . . . Jamaica . . . Regional parties . . . Mercedes-Benz Sedan . . . Ampex Stereo. Scores of luxurious prizes. All wrapped up in the most comprehensive incentive program ever offered to air conditioning dealers.

NEW! INDUSTRY'S MOST LIBERAL FINANCING!

Free floor plan. Stock now, pay as you sell! No down payment. No off-season interest or carrying charges. You get complete flexibility in financing to fit your needs and your local market.

NEW! ADVERTISING THROUGH THE WINTER!

First big off-season promotion featuring Carrier's exclusive "12-Month Home Air Conditioning."

PLUS THE OTHER KEY MONEY-MAKING FEATURES OF A CARRIER FRANCHISE:

- The famous Carrier brand—built by the acknowledged leader and founder of the industry.
- Broadest selection of equipment for every market and every air conditioning need—yours with Carrier.
- Complete emphasis on air conditioning—no dilution because of other interests.
- Solid support from the best established, most experienced distributor organization in the business. Carrier distributors, on the average, have sold the Carrier line for over 15 years.
- Strong national advertising backed by 25 years of continuous advertising effort. Every ad directs prospects to Carrier dealer listings in the Yellow Pages.
- Revolutionary advances pioneered by Carrier—including the new and sensational Carrier Automatic Air Purifier.
- Financing handled by a Carrier affiliate. Your customers get liberal terms and you gain their confidence.
- Sales training that is continuous and complete. Offers vital aid to you and your salesmen.
- On-the-spot help and training in the most modern techniques in engineering, service and business management.
- Carrier Planned Service—a high-margin profit maker and volume builder in off seasons. You can keep your service and installation crews intact and fully staffed year round.

The sooner you get started on Carrier's 'CORNER THE MARKET" Campaign, the greater your 'share value" and the bigger your prizes. Get in touch with your Carrier distributor right away!

Carrier Air Conditioning Company

A DIVISION OF CARRIER CORPORATION · SYRACUSE 1, N.Y.

They'll Do It Every Time

by Jimmy Hatlo

BIGDOME CHECKS EVERY ANGLE OF ANY BUSINESS DEAL BEFORE HE'LL INVEST A SHILLING····
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YESSIR, J.B.···
RIGHT, CHIEF!
RIGHT AWAY, SIR!
THANK AND A TIP OF THE HATLO HAT TO PAUL DEFUR, NORWALK, CONN.
8-1
BUT ASK HIM TO BACK A SHOW THAT HASN'T GOT A CHANCE AND HE'LL GO HOOK, LINE AND SAILBOAT···
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A HUNDRED THOUSAND? CAN I GO TO THE REHEARSAL? I ALWAYS DID HAVE A FLAIR FOR THE THEATRE.. GOT A PEN?
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How Can Commercial Refrigeration Become More Profitable For Its Dealers?

LOCATING a prospect for commercial refrigeration is one problem (although not especially difficult); selling the prospect on you, your firm, and your product is another trial (somewhat more difficult), but perhaps the main (and most difficult) problem is making a profit on every deal.

To sell commercial refrigeration, the successful dealer regularly will apply specialty selling tactics. Obviously a thousand-dollar-and-up transaction isn't an "impulse purchase."

Moreover, installing and servicing commercial refrigeration properly also are paramount keys to profits.

Bad errors in discussing an upcoming installation with the prospect can be fatal. You have to know what you're talking about—forward and backward.

It follows that the commercial refrigeration dealer should be an expert, lest he promise more than he can deliver—thus incurring ill will forever after.

Subject of selling commercial refrigeration at a profit is best introduced by observing its opposite number—'How Can an Installation Be Sold Without a Profit'—or—'How to Take Orders by Always Being the Lowest Bidder.'

A 'lowest bidder' system requires no salesmanship or sales organization.

All you need to run this kind of an operation is a sharpie estimator.

You figure all the jobs that come to you on plans and specs and subtract 5%.

Occasionally when you make a mistake and figure too low, you will be fortunate enough to get the job—and lose your shirt in the process.

You can't make money in any business by just swapping dollars, however.

It is advisable to investigate before bidding, and to study carefully the basic ingredients of a recipe for profits.

These basic ingredients are four, namely:

Salesmanship;

Engineering Know-How;

Good Servicing;

Financial Horse-Sense.

Properly mixed, these ingredients will add up to one great thing: Profit.

Since salesmanship is No. 1 on the list, what are some of the fundamentals in selling commercial refrigeration?

At the top of list, naturally, is Hard Work and shoe leather.

Remember that 10 calls on each of 100 prospects is the reverse of 10% of 100 calls, and you're going to net a lot more money with 10 sales than with one.

The next point is Enthusiasm. A good salesman doesn't think about whether or not the order will be signed. The only thing he wants to know is *when* the order will be signed.

He is convinced that his prospect will buy, and he shows that enthusiastic belief in his oral presentation.

To be sure, it is important to qualify a prospect—to learn as soon as possible whether or not he's worth spending any amount of time on—but until he's shown you definitely that he's not a valid prospect, you should assume that eventually you're going to make that sale.

Another good piece of advice for commercial refrigeration salesmen:

Sell yourself first and foremost, and your product next.

Build up a reputation for knowledge and square dealing—so that people will trust and accept your judgment.

Sell your company, too, naturally.

If you're working for the right people, those who have decent objectives, their integrity and ability to provide good SERVICE are prime assets.

In reverse order, let us reiterate the Rule of Four.

Making a profit on commercial refrigeration as a dealer depends on:

Selling,

Installation Know-How,

Good Service,

Financial Horse Sense.

And the most important of these four factors is Eagerness to SELL, and to sell well.

Doing business this way is fun, too.

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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VOLUME 91, NO. 9, SERIAL NO. 1,649, OCTOBER 31, 1960

From the Files of the News

25 years ago . . .

Jobbers of refrigeration supplies have formed the National Refrigeration Supplies Wholesalers Association, to be governed by a nine member board of directors. Discussed by the new association was the conclusion that a jobber purchases merchandise from at least five manufacturers and that no jobber shall operate a service shop, except for the trade, and no jobber shall do retail work. The new association was entertained by the NEWS at its headquarters in Detroit. . . . At the same time almost 100 representatives of manufacturers of refrigeration parts and supplies met in Detroit to lay groundwork for formation of a permanent association; business of the day included a strong definition of the word "jobber"—what he is, what functions he should perform, and what his limitations are.

A code of ethics is being planned by the newly-formed Better Retailers Appliance League of Detroit.

A $6,500 home featuring year-round air conditioning, centrally controlled oil furnace, complete electric kitchen, and complete wiring system is being offered for "Design 20" in plans available under the General Electric "New American" home program.

What an air conditioning system should accomplish, and some problems facing an air conditioning installation engineer, were discussed by T. H. Mabley at the Refrigeration Service Engineers Society convention in Detroit.

In Fresno, Calif., a billiards and bowling recreation hall finds business booming year-round with its 20-ton Frigidaire air conditioning system eliminating summer slump due to 100°F temperatures common to that area.

•

10 years ago . . .

Walter Reuther has called the recently tightened controls on credit a "grievous blunder which will create mass unemployment" by cutting back demand for goods covered by restrictions. At the same time, 12 Texas and Oklahoma appliance distributors organized to fight against the Federal Reserve Board curbs on instalment buying—more evidence of mounting opposition to tightening government controls.

Detroit air conditioning dealers exhibited their wares at the recent Ninth Annual Review staged by the Detroit District Dental Society with high hopes of convincing a good portion of the society's 1,350 members of the merits of air conditioning.

Wounded GI's are getting expert care aboard the Navy's air conditioned hospital ship, **U.S.S. Consolation,** which is equipped with eight reciprocating compressors by Carrier Corp.

Refrigeration Systems, Inc., Chicago, is now producing a new pharmaceutical cabinet that not only provides low temperature storage but permits "freeze-drying" of heat sensitive biological and pharmaceutical materials—an all-important step in the production of today's "miracle drugs."

A new gas-fired absorption type air conditioner using low pressure steam as the source of energy has been introduced by Eureka Williams Corp.; it features the use of copper throughout the entire system which precludes corrosion and sludging, and new open-end cooling tubes which permit removal of hard water scale.

Impressions left the refrigeration industry by the biggest Dairy Industries Exposition in both attendance and number of exhibits were (1) the dairy industry is at a peak of prosperity and members are showing real interest in buying new equipment and (2) the refrigeration industry has much to offer them in equipment that will get the job done "better, faster, and cheaper."

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

500,000 Yugoslavians at a similar fair in Zagreb.

The Miracle Kitchen will make its first return to the United States this week—at the height of the presidential campaign.

If Messrs. Richard Nixon and John Kennedy would like to use it as a backdrop for a political debate of their own, say Whirlpool people, they'll be glad to make it available.

Stories of the Week

"I have six bits," traveling salesman badgered a cute Arizona Indian waitress, "which says I can show you a good time tonight."

"So? I have a buck who'll say you won't."

"Where are you going? Where have you been?"

From the moment he becomes mobile a boy's mother pounces on him with these annoying queries.

And when he becomes nubile, his wife does likewise.

Even at his grave these questions are proposed.

What's this freedom bit?

Verse of the Week

To get his wealth he spent his health,
And then with might and main,
He turned around, and spent his wealth,
To get his health again.

Add Newspaper Boners

Union GOP Plans Ike Party and 'Pat First Lady' Week.—*Sunbury* (Pa.) *Daily Item.*

Crime Down But Murder Up in City.—*Indianapolis Times.*

Wrong Man Murdered At Minden Monday. — *Fayetteville* (W. Va.) *State Sentinel.*

Each team committed sex errors in the wild game, and only seven of the 14 runs scored were earned.—*Bridgeport Post.*

She does the boudoir and bath bit, emerges shining and sparkling in her baiting suit and new French batiste robe.—*New York Herald Tribune.*

The Massachuetts governor's play was seen by a sapacity audience of 600, including Michigan Gov. G. Mennen Williams. —*Boston Herald.*

Besides his wife, he heaves three children. — *Santa Maria* (Calif.) *Times.*

One of the store owner's wives spotted the men's getaway car. — *Idaho Falls Post Register.*

Kennedy announced that Gov. Luther H. Hodges of North Carolina, a former vice of Marshall Field & Co., will be chairman of the committee.—*Chicago Tribune.*

One of the derailed cars carried highly explosive profane gas, but no leakage could be found in the car.—*Cincinnati Enquirer.*

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Out of Our Mailbag

Paul O. Domke
Refrigeration Specialties
Long Beach, Calif.

Editor:

Here is an item taken from the October 1 issue of *Presbyterian Life.*

Thought you would be interested in this because it certainly shows that air conditioning is being done in a BIG way, in fact, it is OUT OF THIS WORLD. How about being the first one to point up the possibilities of our great industry?

PAUL O. DOMKE

"I stand forever in awe of the work women do in church. Which reminds me of a story. Seems that a bus overturned and killed all the women returning from a church workers' meeting.

"St. Peter, embarrassed, had to tell them that they couldn't come in because of crowded conditions, and it would take a week to open a new addition. So the ladies dutifully agreed to wait down below.

"Five days later Satan telephoned Peter: 'Hurry up and take these women out of here! What with their rummage sales and potluck suppers and church bazaars, they're only 24 dollars short of air conditioning the place.' "

Lamport, Fox, Prell, & Dolk, Advertising
South Bend, Ind.

Editor:

I wonder if there is not a lesson for us in Angkor Ruins in Cambodia.

You will be interested in this clipping from the *South Bend Tribune.* The last two paragraphs particularly support the reasoning in your column concerning "state planners" Galbraith and Schlesinger.

CLEMENT B. HAINES,
Vice President-Secretary

"With fantastic creativity, Jaryavarman's successors built hundreds of magnificent structures over an area of 350 square miles. Exhausted by the frenzied building and turning to passive Buddhism, the nation was invaded about 1400 A.D. by the warlike Siamese."

1439 Chapala Dr.
Santa Barbara, Calif.

Editor:

Recently, on the 35th anniversary of my introduction to the refrigeration industry, I cancelled all affiliations, framed the Lamicoid Psychrometric Chart (a personal gift from Willis H. Carrier) and started giving away my data library.

Disposing of the library wisely is nearly as difficult as it was to acquire. If it were old machinery I could simply send it to Hy Jarvis.

It will interest you to know there is one thing besides the Carrier Chart I do not plan to give up.

It's that first class "Inside Dope" you have been sending me every week for so many years—which, by the way, is registered as "second class matter" by the postal people. Haven't you ever been able to get them to read it?

When your renewal notice arrives next May I'll send the check as per usual. Then no one can say I'm inactive. I'll be well advised.

C. W. HULSE

WHICH JOB WOULD YOU TAKE?

If you're like most of us, you'd take the job with the more tempting salary and the brighter future.

Many college teachers are faced with this kind of decision year after year. In fact, many of them are virtually bombarded with tempting offers from business and industry. And each year many of them, dedicated but discouraged, leave the campus for jobs that pay fair, competitive salaries.

Can you blame them?

These men are not opportunists. Most of them would do anything in their power to continue to teach. But with families to feed and clothe and educate, they just can't make a go of it. They are virtually *forced* into better paying fields.

In the face of this growing teacher shortage, college applications are expected to *double* within ten years.

At the rate we are going, we will soon have a very real crisis on our hands.

We *must* reverse this disastrous trend. You can help. Support the college of your choice today. Help it to expand its facilities and to pay teachers the salaries they deserve. Our whole future as a nation may depend on it.

It's important for you to know more about what the impending college crisis means to you. Write for a free booklet to: HIGHER EDUCATION, Box 36, Times Square Station, New York 36, N.Y.

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HIGHER EDUCATION
KEEP IT BRIGHT

Association Seeks Reforms In Family Military Housing

WASHINGTON, D. C.—Formation of a new national trade association to represent builders of family housing for service personnel and dependents on military installations throughout the United States was announced here.

Known as The Military Housing Association, the new organization is headed by Texas contractor Henry E. Williams, Jr., whose Dallas firm of Williams & Dunlap has built nearly 3,000 military housing units in Kansas, Texas, and Louisiana.

Williams said the primary objective of the association is to obtain "a sweeping reform of the existing military housing program, the so-called Capehart Program, and the establishment of fair and workable procedures which could save millions of dollars for the taxpayers as well as for the builders engaged in constructing this housing."

Military Blunders Cited

He charged that "blunders by military administrators, many of them completely unfamiliar with housing construction have resulted in a log-jam of $150,000,000 to $200,000,000 in unsettled claims against the government by contractors who have performed their work but are unable to collect their money."

"The basic fault in the program, which threatens financial disaster for hundreds of reputable businessmen who entered the program in good faith, lies in the fact that military authorities have arbitrarily taken control of the program away from the civilian Federal Housing Administration," Williams said.

"This high-handed procedure," he said, "is in direct defiance of the expressed will of Congress which stipulated when it passed the so-called Capehart military housing bill in 1955 that responsibility for the program should rest with the FHA."

More than 90,000 of the 120,000 units authorized under the Capehart bill already have been completed, it was stated. Mortgages on these units are insured by the FHA and paid by the Defense Dept. out of the quarters allowances provided for military families.

Williams said there is an urgent need for the establishment of equitable processing, claims, and inspection procedures. He said that present inspections by military officials without previous housing experience have resulted in excessive costs to the taxpayer, far above the cost of comparable civilian housing.

The association opened its national headquarters at 1737 De Sales St., N.W., Washington 6, D. C., with Williams as president, Ralph Kaul of McLean, Va., as vice president; Los Angeles Builder Elias Miller as secretary-treasurer; and Austin, Texas Attorney Jake Jacobsen as general counsel.

Progress Report No. 2

Northern Mich. Heat Pump Often Cools, Heats on Summer Day

TRAVERSE CITY, Mich.—Summer operation of a 4-ton residential heat pump here found the unit both heating and cooling in a 24-hour period on 27 days during the period of June 1 to August 31.

This was disclosed in another progress report on the installation prepared recently by Dallas Alsup, farm service advisor for Consumer Power Co.'s Northwest Div. here.

A detailed report on the first winter's operation of the system appeared in the Sept. 12, 1960, issue of the NEWS. The installation was originally described in the Sept. 21, 1959, special Heat Pump issue.

Equipment involved is a G-E "Weathertron" split system air-to-air unit rated at 4 tons for cooling and 90,000 Btu for heating (including three 6.9 kw resistance elements). An electrostatic air cleaner is hooked into the air distribution system, and the blower runs constantly.

Recording demand and kilowatt-hour meters were installed by the utility to permit an accurate check of the operation.

For summer operation the owner of the house set the thermostat to maintain 75°-77°F.

In addition to noting the 27 days on which the system both heated and cooled, Alsup reports that it operated on cooling only on 45 days (including 24 in August, 17 during July), and that on one day, Aug. 14, the system neither heated nor cooled.

Total power metered for the system during the 92-day summer period was 2,800 kwhr, according to Alsup. He estimates that the ½-hp blower used 1,100 of the 2,800 kwhr total.

(At the prevailing rate of 2 cents per kwhr, this means the three-month cost of operation was $56, or less than $19 a month for complete control of indoor air conditions: cooling or heating automatically as needed, filtration with an electrostatic air cleaner, and air circulation.)

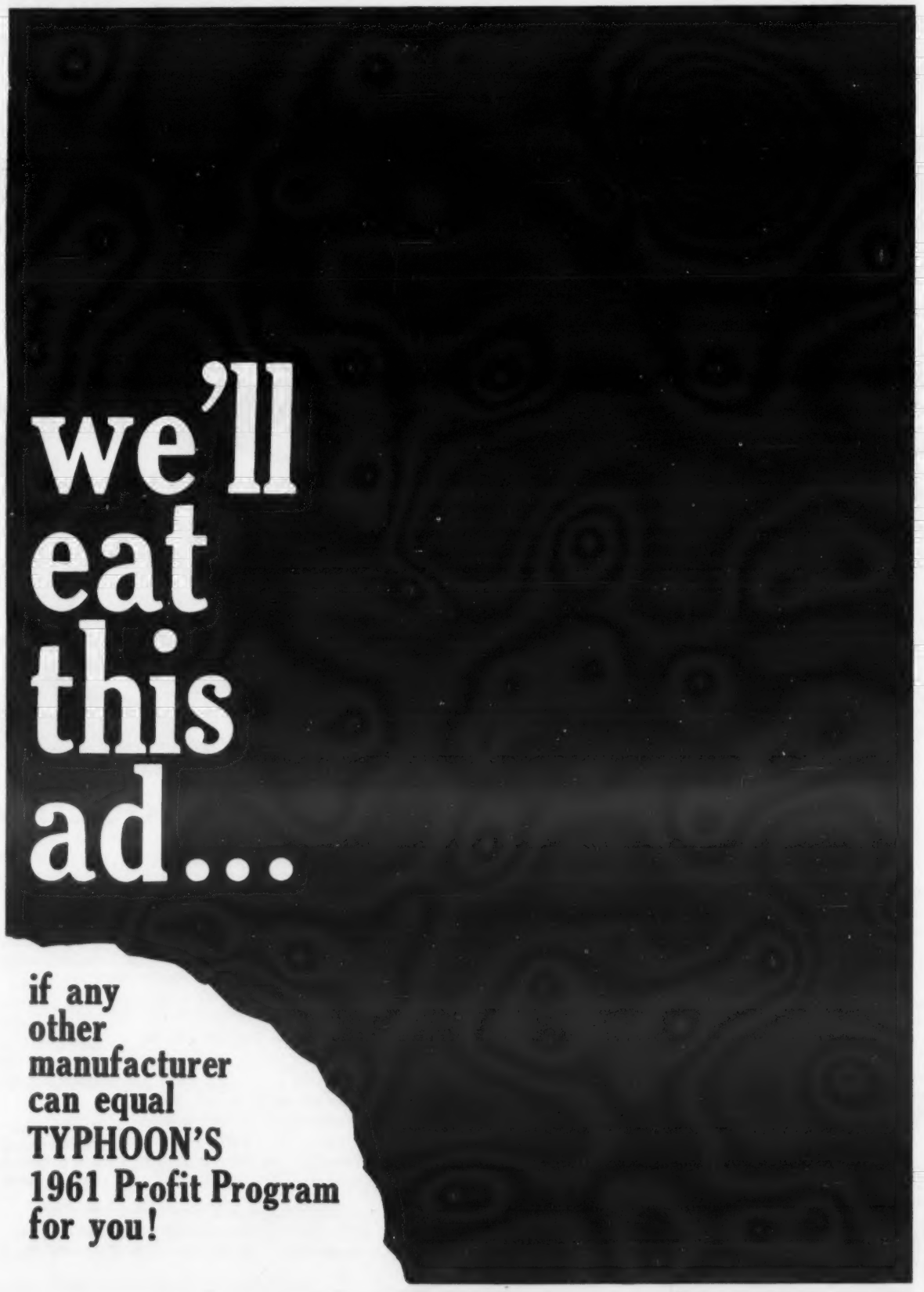
It was also noted by Alsup that the ratio of the lowest monthly power use of the heat pump (840 kwhr in June) to the highest (3,280 kwhr in January) is 25.6%, which he feels is "a much more favorable load factor than in any other system."

Metering of the system will be continued by the utility this winter to check the effects of adding 2 in. of insulation on the inside of the concrete walls of the basement.

40 Homes To Get All-Gas Heating, Cooling

DALLAS—Bob Brown, president of Lone Star Air Cooling Co., announced the recent sale of air conditioning and heating equipment for 40 homes to be built by Smith & Gual, Dallas builder. The sale was made by Jim Thompson of Lone Star.

Officials said the homes will be in the $20,000 price range and will feature all-gas heating and air conditioning. Lone Star will install heating and cooling.



Burkhardt Urges Midwest Heating Oil Dealers To Sell, Install, and Service Oil Burners

DES MOINES, Iowa — "The touchstone of the future is the oil burner."

Thus did Charles H. Burkhardt, managing director of the Oil Heat Institute of America, highlight his remarks to dealers in attendance at the Iowa Independent Oil Jobbers Association Diamond Jubilee Oil Heat Conference and Trade Show held here recently.

"We cannot survive if we just sell heating oil," Burkhardt warned, pointing out that "if you produced all the heating oil that every tank in the world could consume at the present you would not move a single drop of it if there weren't over ten million oil burners in the United States operating day and night for a great number of days and even months throughout the year to consume it."

He said the "goose that has laid all the golden eggs in building up this multi-billion dollar industry has been the oil burner."

"Oil heating cannot live by promotion alone," Burkhardt said. "Whether or not we stand or fall in the next five years will depend upon the ability of the individual dealer in the United States to assume his full responsibility—economic and moral—to the oil consuming public."

This responsibility, according to Burkhardt, is the responsibility to sell, install, and service oil heating equipment, not just to sell and deliver heating oil.

Burkhardt said in many areas these responsibilities are in the hands of persons who have "absolutely no long-range interest or investment in the distribution of heating oil or in any of the facilities that are required to distribute it."

These men have no "innate loyalty" to oil heat, Burkhardt asserted.

"But, if the man involved with the sale of equipment has tens of thousands of dollars invested in bulk plants, in property, and in equipment required for the distribution of heating oil and he sells and installs heating oil equipment, you can bet that no other fuel is going to wean him away from the efforts necessary to install more oil burners or at least enough to keep his business in a state of equilibrium."

The OHI official said that the oil heat business is, by its very nature, an integrated business.

"There is a product which is sold and delivered; there is a device which burns the product and which requires sale and installation; and there is maintenance and service on this product in order to keep it operating. If you are not engaged in all three facets of the business, then you have no great hope for the future in your area for oil heating.

"If, in the past, it has been your policy to sell heating oil alone and not to sell equipment and not to install it and not to service it, then you have no rendezvous with destiny in this industry. The cards are already fairly well stacked against you.

"We must look to the future for better equipment, we must promote and advertise, we must integrate our efforts to assume our full economic and moral responsibility to the public. Once you condition yourself to do that, then this industry has a happy future."

Mass Market Awaits

A mass market awaits oil heat with the proper approach to the builder, Burkhardt assured his audience.

"The question of subsidizing the builder is something that is vitally important to us; and it is going to have to be considered on national levels. For every dollar invested in a subsidy for a builder, you have a substantial concrete return.

"Therefore, there should be some definite thinking in relation to allocation of expenditures, not only for advertising and promotion, but for developing some kind of intelligent and concrete plan that will draw the builder to us. He stands out there in the distance, capable of giving us millions upon millions of gallons of business, and we have not yet met the challenge."

The oil heat dealer was advised to look into the age of his customers' equipment and see that oil burners are replaced before the user considers changing to another fuel.

Urges That Replacement Burner Costs Be Spread Over Several Years

He urged that the cost to the customer of a replacement burner be spread out over several years on the oil bill, without any interest charges, "since such a replacement will almost certainly insure the retention of oil heat in that household for a number of years to come."

Burkhardt also offered the idea of the "central service agency" as an efficient method of utilizing trucks, manpower, and bookkeeeping jointly by several companies in order to provide service to oil heat customers. He indicated that rising costs may see some type of centralization, not only in installation and service, but also in delivery of heating oil.

"Some of this may sound far fetched, but it isn't," Burkhardt noted. Nothing forces changes in business or politics like adversity.

"We are going to witness, I believe, in the next five years a considerable number of changes. How we will weather these changes depends upon our ability to feed each other.

"It's in feeding each other through associations and activities such as this that we come about to the interchange of ideas that enable us to hear things and to do things that, individually, we would not have dreamed of."

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

The Industry's Biggest Line of Packaged Units. Typhoon adds 28 new units to its 1961 line of air conditioners, furnaces, heat pumps. Unmatched versatility and scope! A superior Typhoon unit for every need–a solution for every installation problem. As always, Typhoon leads in engineering!

Most Flexible Line. Only Typhoon gives you customized units at little or no extra cost. Mass produced components custom-assembled to your order gives you a tremendous competitive advantage. You can sell without sacrificing profit.

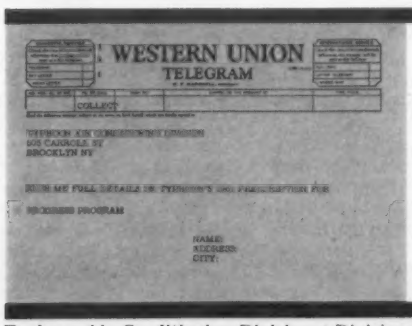
Outstanding Financing Plans. Typhoon again gives you every plan necessary to simplify payment for your customers, while relieving you of financial strain. Helps you stock and sell.

All-Out Sales Effort. Typhoon trains your salesmen. Helps you sell, locally. Does your selling for you, nationally, to headquarters of major chains.

"Prescription for Progress." For 1961, Typhoon dealers are following a master plan for profit—Typhoon's "Prescription For Progress." National advertising. Local promotions. Specialized programs aimed at helping you sell in the Commercial, Industrial, and Residential markets. A wealth of material, carefully planned, skillfully executed ... to give you the ammunition you need to make more, more easily. It's all in Typhoon's "First Aid For Sales" Kit.

Top Travel Awards. An unlimited number of Jamaica vacations available for the winning. All it takes is your salesmanship. We call it "Jamaica Jamination"–you'll call it "taking candy from a baby." That's how easy it is to win!

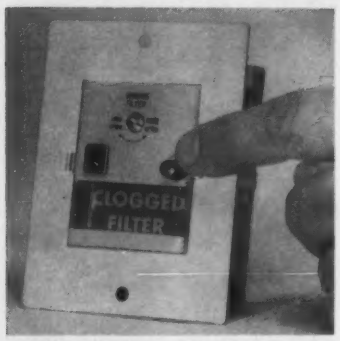
Study the facts and you'll agree: in every way, Typhoon dealers enjoy a considerable advantage in product engineering, promotions, and profits. For more information, and a brand new Reference Wall Chart on the "Complete Line," use the collect telegram in this ad. Or call or write us.



TYPHOON
DIVISION OF HUPP Corporation

Typhoon Air Conditioning Division / Division of Hupp Corporation / 505 Carroll Street / Brooklyn 15, New York

Air Filter Warning Device Flush Mounts



● Introduction of a flush-mounted model of its clogged air filter warning device for use with forced air furnaces, air conditioners, or heat pump units has been announced by Minneapolis-Honeywell Regulator Co., Residential Div., Dept. AH&RN, 2753 Fourth Ave. South, Minneapolis 8.

The new "Filter Flag"—which provides visual warning to the homeowner whenever the air filter needs cleaning or changing—can be mounted easily on the side of the unit by either equipment manufacturers or dealers, the company said.

Using a template, the installer cuts a hole in the side of the blower compartment, clips the Filter Flag to the mounting plate, and fastens the mounting plate to the chamber.

Honeywell said the flush-mounted model can be used with special thermostat subbases to provide a red warning light when the filter needs attention. Or it can be used with the firm's deluxe "Weather Station" year-round air conditioning control panel to signal a clogged filter situation.

Also available in both surface and flush-mounted models is a special Filter Flag for use with central air conditioning units. Whenever the filter becomes clogged, the cooling unit is automatically shut off to prevent possible coil "freeze up."

List price of the Filter Flag is $6.90.

'Eastonair' Available In Scents for Seasons

● Introduction of a new series of its guaranteed odor/fume controllant "Eastonair" hase been announced by Easton R. S. Corp., Dept. AH&RN, 4907 Farragut Rd., Brooklyn 3, N. Y.

The company indicated it aims "to make air handling engineers aware of the untapped potential of psychologically associating 'conditioned air' (cooling or heating seasons) with 'seasons' to arouse the senses." It also says lack of odors and pleasing scents are an important part of the dealer-contractor objective of adding comfort to air in occupied living, work, and selling areas to increase people's efficiency, mood, and disposition.

To help meet this objective, it was indicated, Easton engineers have developed a series of four specially-scented Eastonair called "Seasonal Eastonair." Named to suit the merchandising seasons of American retail and department stores, the scents are "Parfum Feminine" (for general cold weather season); "Fresh-Cut Cedar" and "Sugar & Spice" (for the Christmas merchandising season); and "Spring Floral" (for the early spring season).

The four scents are packaged in standard 5-lb tins, eight cans per case.

for those important "EXTRAS"...
lower cost—high quality—
prompt delivery

look to LEHIGH

Liquid Receivers— 6" to 12" diameter, up to 60" long

Condenser Receivers— ½ to 5 h.p.

Designed and built to meet all your requirements.
U.L. approved. ASME coded.

LEHIGH

LEHIGH MANUFACTURING COMPANY,
Division of Lehigh, Inc., Easton, Pa.
Manufacturers of Hermetic and Open Type Condensing Units; Compressors; Receivers; Condenser Receivers.

Ice Cuber for Home, Small Business

● A new ice cube machine for residential or light commercial use is being offered by Revco, Inc., Dept. AH&RN, Deerfield, Mich.

The cuber, capable of producing up to 35 lbs of ice per day, is available for built-in or free standing installation. It can be used for undercounter installation with dimensions of about 16 in. wide, 24 in. deep, and 34½ in. high.

"Clear cubes are made by running water over a refrigerated plate and cutting the large block into cubes by means of a hot wire grid," it was explained. This removes all air and impurities. Storage is 'wet' or self-refrigeration with the cubes providing the storage temperature."

The machine will retail for approximately $359.95.

'Rotary-X-Changer' Recovers Heat, Cold

● A new heat exchanger designed to recover heat from contaminated exhaust air, or conversely to cool incoming air to air conditioned or refrigerated space has been developed by Heat Recovery Corp., Dept. AH&RN, 671 Mt. Prospect Ave., Newark 4, N. J.

The unit, called the "Rotary-X-Changer," is engineered to fit into the intake and exhaust of a ventilation system. A rotary wheel within the unit, filled with heat absorbing material, absorbs heat from contaminated exhaust air and transfers it to incoming fresh air, it was stated.

According to the manufacturer, "over 80% of exhausted heat is recovered by this process resulting in large heat and fuel savings."

When used in the ventilating system of air conditioned or refrigerated spaces, the Rotary-X-Changer recovers cool exhaust air to cool incoming fresh air thus resulting in savings by lightening the load on the refrigerating system, the announcement said.

Want More Details?

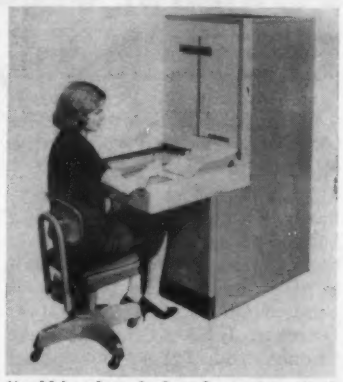
ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

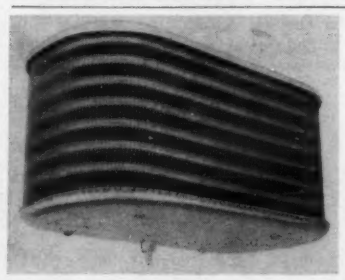
'Pushbutton' Filing System Available

● A new "Electro Kardex" file, said to be capable of bringing the speed and efficiency of pushbutton filing to any office where visible records are or can be profitably employed, has been announced by the Remington Rand Systems Div. of Sperry Rand Corp., Dept. AH&RN, 122 E. 42nd St., New York 17, N. Y.

"Literally all visible records applications can be made more efficient with the new unit: inventory control, personnel records, purchasing, and records controlling credit, production, costs, sales, etc.," the company said.

"The Electro Kardex is a self-contained work unit. The operator pushes a button on the selector panel before her, to get any one of the more than 4,000 records within the unit. In an average of four seconds, a slide containing that record automatically positions itself in place before her, at perfect posting level. A quick visual run down of the exposed edges of the Kardex pockets brings her to the specific one she wants; a final quick flip with her finger exposes the complete record."

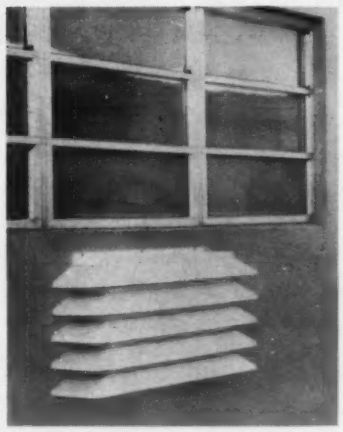




'Dual-Aire' Unit Cooler Has Frontal Discharge

● The Bohn "Dual-Aire" small unit cooler is now available in a model for applications where a frontal discharge of air is preferred or is desirable, according to the Danville Div. of Bohn Aluminum & Brass Corp., Dept. AH&RN, Danville, Ill.

The new unit (model U-2F), draws air in from both sides and discharges cooling air through the front; it can be top or back mounted.



Air Conditioner Cover Made of Aluminum

● "Air-Cover," an all-aluminum product designed to protect the outside portion of through-the-wall air conditioners from sun, rain, and dirt, and to improve the appearance of the building has been introduced by Air-Cover Corp., Dept. AH&RN, 45 N. E. 54th St., Miami 37, Fla.

The standard size Air-Cover has a 6-in. projection. Other measurements are: 30 in. inside width; 18¾ in. inside height; louver projection each side, 5 in.; louver projection front, 2½ in.

The product is manufactured with any projection that may be required but the company recommends that dealers and distributors stock them in even numbered sizes. Suggested list price of the 6-in. projection Air-Cover is $29.95. The price increases $1 per inch for each inch of projection beyond 6 in.

Electronic Hood Uses Electrostatic Ionization

● Introduction of what is termed a new concept in a ductless hood — electronic operation — was announced recently by Powervent, a division of Progress Mfg. Co., Dept. AH&RN, Philadelphia 34.

"The electronic hood operates on the principle of electrostatic ionization," it was explained. "Smoky, grease-laden air is drawn into the hood by blower action. The individual microscopic particles, which actually compose the smoke and fumes, pick up an electrical charge.

"They are then fed to an electrically-charged collector plate, to which they are attracted and adhere, due to the mutual attraction of the opposite electrical charges. After particle removal, the now-pure air is blown back into the kitchen.

"The electronic hood is simply and easily affixed to the wall above range, operates off standard 110-volt current. Hoods are available in 30, 36, and 42-in. models."

All-In-One Shear Has Own Power Unit

● Following introduction of its new "Docken" sheet metal shear in 1959, C. W. Lind Co., Dept. AH&RN, 3403 Penn Ave. North, Minneapolis 11, has announced the availability of a new all-in-one shear with its own power unit.

"New design and construction features that add to its ruggedness have been incorporated into the new model," the company said. "Several of the popular brand ¼ in. industrial drills can be used as an alternate power source."

The shear is described as "a versatile, 'on-the-job' tool that permits fast, clean cuts on sheet metals up to 18-gauge mild steel, and up to 1/16 in. laminated plastics. Its powerful scissor action makes small radial cuts possible in light materials, and makes square, rectangular hole or straight cuts quick and easy from a ¼ in. starting hole."

GOING TO THE SHOW?

The 15th International Heating & Air Conditioning Exposition

Chicago—February 13th thru 16th, 1961

YES

To make the most of your time and investment and still have time to enjoy the sidelights of that Chicago trip, make a note right now to pay particular attention to all NEWS' January issues. These issues will be filled with articles and advertisements describing who, what and where about the show.

Knowing what to see and where to go is the key to making such trips pay off. Before you leave for the Exposition make sure you take your big February 13th Show Issue of the NEWS. If you have to leave before it arrives, stop by the NEWS' booth (No. 342) and pick up one of the extra copies we will have on hand for show goers.

NOT GOING

Tied Up . . .

Can't Spare the Time

You're not left out. Next to attending the Show, reading about it in the NEWS' Pre-Show, Show and Post-Show issues is the best possible way to obtain the benefits that such all-industry shows offer. We'll report on all the exhibits, new products, technical meetings, social functions and general color long before any other industry publication . . . and with greater detail too!

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THE *ONLY* WEEKLY NEWSPAPER

Reaching these MARKETS
- Air Conditioning
- Heating
- Refrigeration

Serving these FIELDS
- Residential
- Commercial
- Industrial

Cross Ambient Compensation Of Vapor Pressure Operated Temperature Controls

By Richard W. Cobean, Appliance Control Dept., General Electric Co.

Millions of vapor pressure-operated thermostats are in use in refrigerators, freezers, and room air conditioners, chosen for their job because of simplicity and high temperature sensitivity.

In a normal refrigerator, where the evaporator temperatures the compressor on and off as needed there is no cross ambient compensation problem. Here the end of the capillary tube in contact with the evaporator is colder than any other point in the system, and the small amount of liquid naturally stays at the desired control point, as shown in Figs. 1A and 1C.

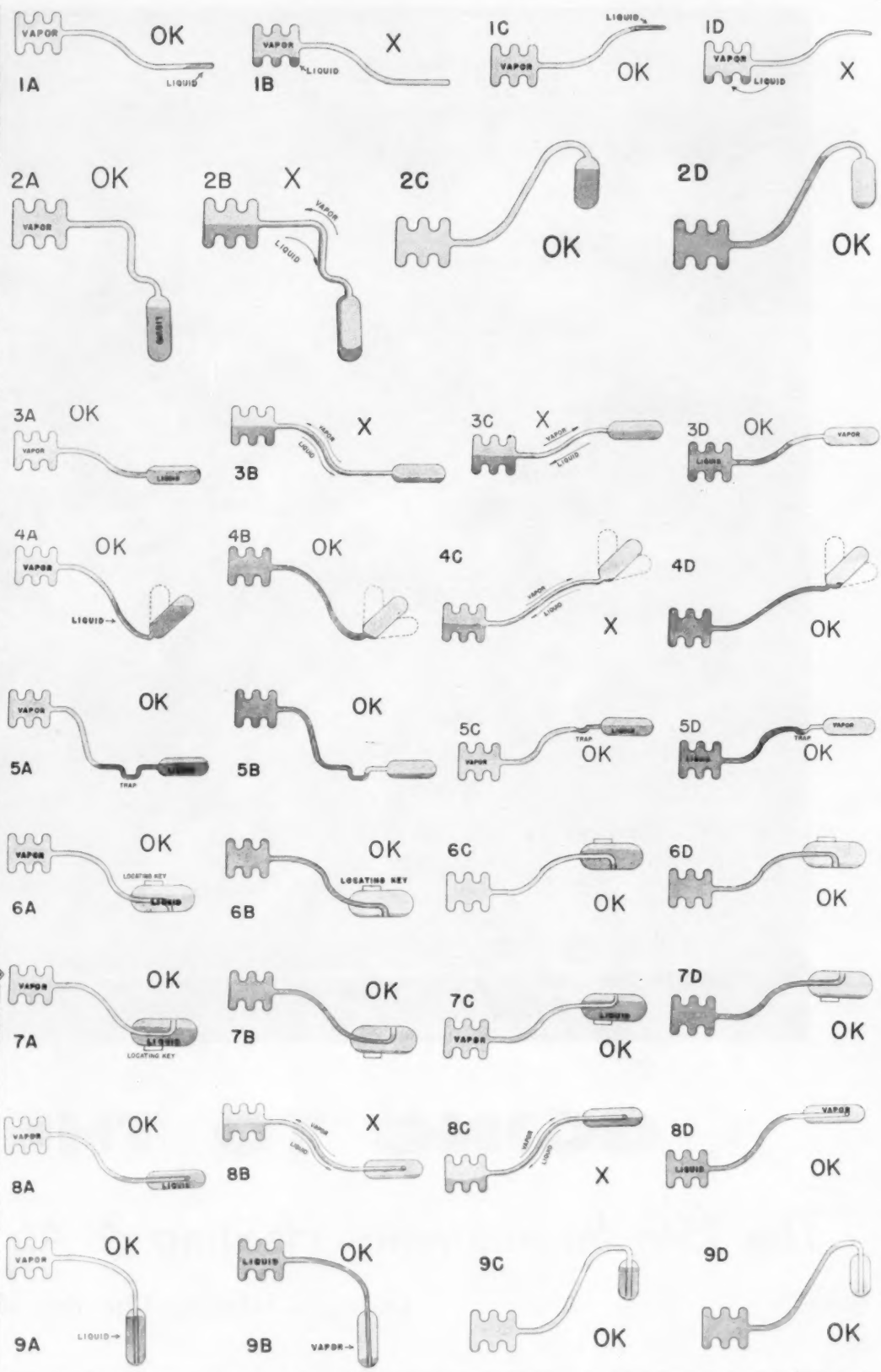
When the desired control point, the end of the capillary, becomes *warmer* than some other point on the capillary or the bellows, as illustrated in Figs. 1B and 1D and encountered during a forced defrost of a refrigerator or freezer or as a normal operating conditioner in many room air conditioners where temperature of returning room air is sensed, the thermostat is in trouble.

The liquid distills from the warmer control point and recondenses at the coldest point in the system, which then takes control regardless of the wishes of the designer.

This would be an absolute limitation on application of vapor operated thermostats if it were not possible to compensate for this so called "cross ambient" condition by adding a bulb at the controlling end of the capillary and, especially, arranging the system properly. The purpose of this article is to illustrate several bulb constructions and arrangements of bulb, capillary, and bellows and consequences of these arrangements.

If the control must operate under both conditions of control point-cooler and control point-warmer than the bellows and thermostat, some requirements are imposed on the size of bulb and the amount of liquid which must be charged into the system.

There must be enough liquid entirely to fill the bellows and capillary, with a small amount left for the bulb in cases where the bulb is warmer than the rest of the system but must still be in control. Then the bulb must be large enough to contain entirely all of this liquid with a small amount of vapor space left for the condition



where bulb will be colder than the rest of the system.

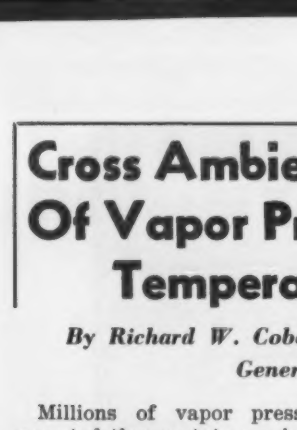
In actual production units, the maximum liquid charge will vary over tolerance range with the above as a minimum, and the bulb size will include a tolerance with the minimum bulb volume able to contain the maximum liquid charge volume.

In cases where the control point will always be warmer than the bellows and capillary, it is sufficient nearly to fill the system with liquid but unnecessary to add the bulb large enough to contain all of this liquid. However this is not the usual case. In forced defrost refrigerators and freezers, and in room air conditioners, usually the control end of the capillary can be either warmer or cooler than the rest of the system according to operating conditions.

In understanding the diagrams showing various constructions and arrangements several basic facts must be clearly understood:

1. Pressure in the bellows-capillary system will be determined by the temperature of the liquid-vapor surface *wherever it may be.*
2. Liquid in the system will distill to the coldest point in the system.
3. If liquid can drain by action of gravity from the coldest point to some other warmer point, being continuously replaced by vapor flowing from some warmer place, equilibrium will not be reached and the calibration of the thermostat will appear to be in error (even though the switch assembly may in fact be operating perfectly).

The diagrams are divided into



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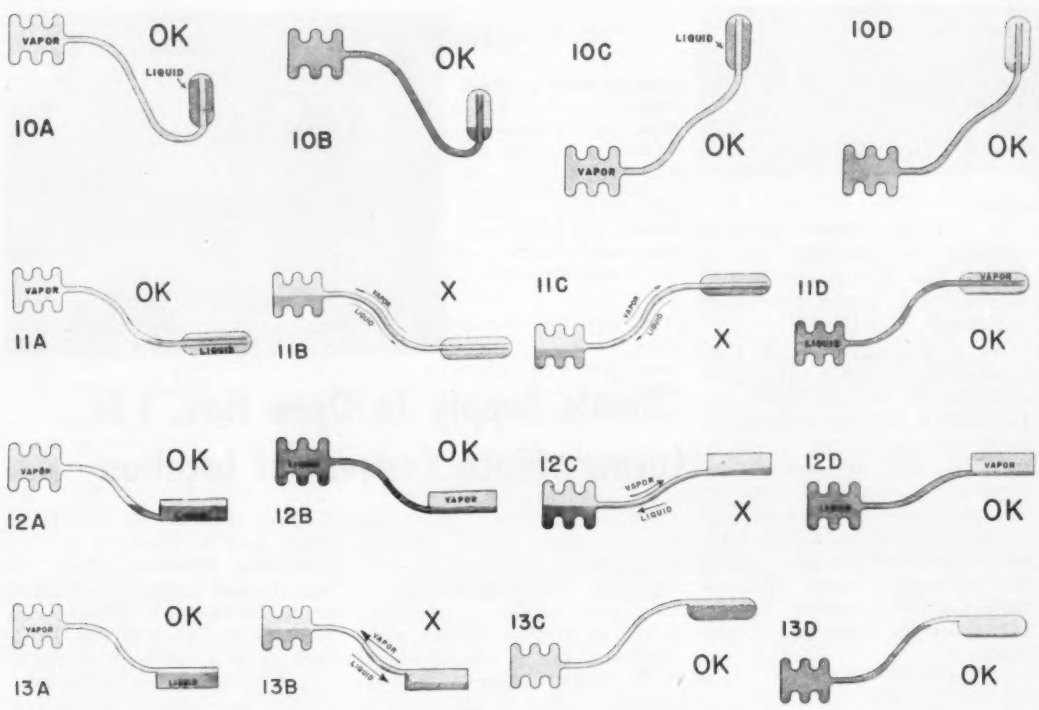

four groups according to whether the bellows is higher than the rest of the capillary system or is lower and according to whether the bellows is warmer than the rest of the capillary system or is colder. Therefore, there are four individual diagrams illustrating any one basic construction and arrangement.

In Fig. 1 it is clear by location of the liquid vapor surface that when the bellows is warmer, operation is as desired. However, when the bellows is colder, the liquid ends up in the bellows and the temperature of the bellows or control itself rather than the temperature of the end of the capillary controls the turning on and off of the thermostat switch.

In Fig. 2 a bulb and liquid charge of adequate volume have been added, but the arrangement is bad for the situation where the thermostat is higher than the controlling bulb. When the bellows is colder, liquid distills to the bellows but can run freely down the lower side of the capillary back to the bulb, where it is re-vaporized and moves upward in the upper side of the capillary to return to the bellows and condense again. In such a condition equilibrium is never reached; bulb temperature only partially controls the system, and bulb temperature must over shoot the original calibration in order to operate the thermostat switch.

With the bulb horizontal, operation is unsatisfactory in one of the two conditions for both bellows higher and bellows lower than the bulb. However, note that situation 2B or 3B can be made to operate properly as in 4B or 5B by either turning the bulb partly or entirely vertical with open end down, or by introducing a trap in the capillary next to the bulb. This is a simple thing to do and can usually be included in a design if the need for it is recognized. When the bellows is lower than the bulb, the open end of the bulb must be upward as in 2C or a trap in the capillary next to the bulb as in 5C will also work.

Figs. 6, 7, and 8 illustrate a type of bulb sometimes used which includes an internal trap. However, note that a locating key on the outside of the bulb or some equivalent means of turning it properly is required since the trap is effective only if turned down or up as in Figs. 6 and 7. If the bulb is turned crosswise as in Fig. 8 the internal trap has no advantage at all.

Another bulb construction sometimes used is illustrated in Figs. 9, 10, and 11, in which capillary passes almost entirely to the other end of the bulb. This construction acts as an effective trap when the bulb is vertical with open end either up or down, but no advantage results if the bulb is horizontal.

Still another construction is shown in Figs. 12 and 13, but again the bulb must be mounted properly to get the trapping action desired. If this bulb construction is mounted vertically either way up, it has no advantage over the bulb construction shown in Fig. 2.

One conclusion obvious from this discussion is that the simplest type of bulb construction, that shown in Figs. 2 through 5, will operate as well as any of the others, and that all types of bulb construction have special requirements to be satisfied in order to operate properly in any particular application.

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J. H. Martin

E. H. Harwood

White-Rodgers Creates New Executive Posts

ST. LOUIS — White-Rodgers Co. has announced creation of two new executive positions within the firm's sales organization.

Edward E. Harwood becomes sales manager, Original Equipment Manufacturer Div.; John H. Martin is appointed sales manager, Wholesaler Div.

R. A. Sherer, vice president of the automatic controls manufacturer, said in announcing the appointments that "the creation of these two positions marks a major step in our continuing efforts to bring our manufacturer and wholesaler customers services really tailored to their specialized needs."

Both men will work in close coordination with Gerald J. Powell, national sales manager.

Dixon Succeeds Perkins As Modine President

RACINE, Wis.—C. T. Perkins, president of Modine Mfg. Co. since 1948, announced his retirement effective Sept. 30 at the regular meeting of the Modine board of directors.

A. G. Dixon

A. G. Dixon, executive vice president, was elected to succeed him as president. Perkins will continue as a member of the board of directors and has been named vice chairman.

Modine manufactures heating, air conditioning, and heat transfer equipment and products for the automotive industry.

Copeland Names Brown In Southeast Region

SIDNEY, Ohio — Burl C. Brown has been named southeast U. S. regional sales manager by Copeland Refrigeration Corp., it was announced by Rudy Berg, vice president.

B. C. Brown

Brown, with headquarters in Atlanta, succeeds Bert Kaple, who has retired, completing a 22-year association with Copeland in this region.

Brown has been associated with air conditioning and refrigeration since 1949, as general manager of the Air Conditioning Dept. of National-U. S. Radiator, Johnstown, Pa.; design engineer for the Coleman Co., Wichita, Kan.; and district engineer for the S. A. Long Co., also of Wichita.

Dunham-Bush Names Henri Soumerai

WEST HARTFORD, Conn.—Alan S. Decker, vice president, engineering, Dunham-Bush, Inc., has announced the appointment of Henri Soumerai as director of research and development for its air conditioning, refrigeration, heating, and heat transfer products.

H. Soumerai

Soumerai was formerly associated with the Air Conditioning & Refrigeration Div. of Worthington Corp. in this country, and with Therma A. G., Schwanden, Glarus, Switzerland. He is well known for his work in compressor development and heat transfer fields.

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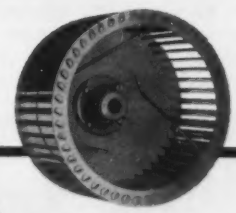

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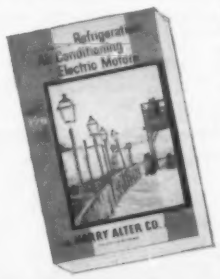

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TECH CENTER

by Frank J. Versagi, Technical Editor

Pressure-Defrosting for Heat Pumps (1)

Earlier this year, Techcenter described a proposed heat pump defrost method submitted by Mechanical Cooling Co., Houston, Texas. In this 2-part article, Ranco, Inc. offers its evaluation of the suggested pressure-defrosting technique.

We feel, because of our interest in refrigeration and air conditioning controls and in particular, controls as used on heat pumps, we should reply to the article "Heat Pump Defrost" as published under Tech Center in the NEWS for April 4, 1960.

Four disadvantages of a temperature differential defrost control were listed as:

1. **"Difficulty in securing good thermal contact of the sensing bulb and coil tube."**

We feel this is no more difficult an operation than has been successfully performed by the refrigeration industry for years on refrigerators, coolers of various types, freezers, etc. We agree the degree of intimacy of contact can vary the sensed temperature but not only on heat pumps but on all types of refrigeration apparatus using a similar temperature sensing design. Proper use of a bulb well, brazed or tightly clamped to the end bends or the bulb securely fastened to the end bends, is not difficult to do and will give satisfactory operation as proven through the past history of the refrigeration industry.

2. **"Inaccessibility of the tube surface where the bulb must be attached makes servicing or replacing of the switch awkward."**

In all the heat pump designs we have examined, tested, and inspected in the field, we have not run into this as being a problem. The heat exchangers are usually fairly accessible and since the bulb is secured on an outside end bend of the exchanger, access to the bulb is usually no problem. We agree that servicing of components can be a problem on many types of machinery, such as automobiles, refrigerators, etc. We have all heard the mechanic give forth when he has to replace certain components on our automobiles. We know from experience that a pressure control can be placed in just as inaccessible a position as a temperature control.

3. **"Differential switches must be adjusted to the characteristics inherent to a particular make and design."**

So must any temperature or pressure controls used on any type of refrigeration or air conditioning apparatus be of the correct settings to give satisfactory performance. We would agree that the applying of a defrost control, whether temperature or pressure actuated, to a heat pump is more involved than applying a simple cycling thermostat to a domestic refrigerator but the heat pump imposes many more conditions of operation. Applying a temperature differential defrost control on window type units (or small central systems), where the unit is factory assembled and charged and the application has been proven by adequate tests, does not present a problem of adjusting the switch. For field installed units where the actual installation may be entirely different from one unit to the next, a greater possibility of need of defrost control adjustment exists. (Temperature or pressure actuated).

4. **"Temperature sensing switches are generally not as reliable and do not retain their accuracy as do pressure-actuated switches."**

As a manufacturer of both temperature and pressure switches we do not have any facts which can prove this statement. Depending on a multitude of conditions such as differentials, ranges, design of the control, environment involved, etc., it is a fact that some temperature controls will be extremely more accurate than a pressure control operating under the same set of conditions.

(To Be Continued)

Lau Blower Promotes Charles C. Miley to Manager of Blower Sales

DAYTON—Charles C. Miley, a 21-year veteran with The Lau Blower Co., has been appointed manager of blower sales for the company, according to W. W. Morrissey, director of marketing.

C. C. Miley

Miley was formerly a sales engineer for Lau in northern Ohio, northern Indiana, and western Pennsylvania. He will be responsible for the organization and direction of Lau's blower sales force for the entire United States with the exception of Pacific Coast states.

2 California ASHRAE Chapters Plan Joint Meeting on Nov. 2

SACRAMENTO, Calif. — Annual joint meeting of San Francisco's Golden Gate Chapter and Sacramento's Sacramento Valley Chapter of the American Society of Heating, Refrigerating & Air-Conditioning Engineers will be held in Sacramento Nov. 2 at the Town House restaurant, 1517 21st St.

Richard E. Stockwell, secretary of Sacramento Valley Chapter, reports principal hydraulic engineer Alfred J. Dolcini of the State Dept. of Water Resources will speak on California's water problems as they relate to the San Francisco bay area and northern California including the Sacramento valley.

Attendance chairman Fred Taylor of Barber-Colman Co. reported Sacramento Valley Chapter meetings resumed this fall with a high attendance of 74 at the October meeting when Sander Sheff of Pacific Air Products, Los Angeles, discussed problems of high velocity systems from fabrication and installation points of view. Sheff is vice president for engineering and research.

STAFF MEMBERS of Climate Supply Co., Inc., Dallas, stand behind Chairman of the Board R. F. Polley who is seated at his desk. Left to right are: Charles Lee, secretary; George Sexton, president and general manager; Haskell Whitten; and Claude Calvert.

Climate Supply To Open Nov. 1 In Larger, More Convenient Location

DALLAS — When move he must, to what factor does the refrigeration and air conditioning parts and supplies wholesaler give prime consideration in the selection of a new site?

Convenience is the answer of R. F. Polley, chairman of the board of Climate Supply Co., Inc., here.

Polley was faced with that very problem last year when it became obvious that that company had just plain grown out of its quarters at 3920 Main St.

"We needed a more convenient location, better display facilities, and more warehouse space to serve our growing list of customers and our growing list of products," he explained.

To Polley, a convenient location meant one close to as many of his customers as possible and easily accessible to the rest and to suppliers.

It also meant provision of ample parking space to handle peak loads of traffic and thus save customers' time and tempers.

Convenience further entailed sufficient space to warehouse customer requirements and to display products adequately.

Convenience meant self-service operation to save time both for customers and his own employes.

Polley found such a location in Dallas' Trinity Industrial District. He opens his new quarters there, at 2332 Valdina Ave., on Nov. 1. An "Open House" is scheduled for Dec. 3.

He selected the Trinity Industrial District, because the 1,500-acre area along the Trinity River already houses more than 1,000 firms, many of them customers of Climate Supply.

Only five minutes from downtown Dallas, the district is served by broad avenues ranging from 80 to 300 ft in width and is bisected by the Stemmons Freeway. This 16-lane divided highway furnishes rapid north-south access and ties into the Fort Worth Turnpike. It is a segment of Highway 35E, which will eventually stretch from Mexico to Canada.

Thus easy access is provided for other city customers and for those in the northeast Texas area the company serves.

A 12,000-sq ft parking lot exactly matches the new building in size. The warehouse is built at dock height and designed to serve pick-up trucks as well as tractor-trailers.

About one-fourth of the entire plant space is devoted to display area, where special displays, such as cut-away models, will be maintained constantly and changed frequently.

Hundreds of often-needed small items will be displayed for self-service.

"Climate Supply likes its customers to come in and see its wares instead of using the telephone," comments Polley.

Polley founded the company in October, 1954. He built it on the policy of acquiring the best lines of products available and developing a staff of well-trained men interested in working to build a sound business. Part of his policy is to stand behind every product sold, regardless of manufacturer's attitude on guarantee.

In 1955, Climate Supply opened a warehouse in Tyler, Texas to serve that area. Today, the Tyler warehouse is connected by direct telephone wire to Longview to better serve that community.

Earlier this year, George Sexton, who has been with Climate Supply since its inception, was named president and general manager.

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NWAHACA Convention--

(Continued from Page 1, Col. 3)
cussion of our problems and the best way to get action."

Those who attend the convention at the Statler-Hilton hotel here will get factual reports on new developments in the design of systems and new ideas on marketing and business management, he pointed out.

Run-down on Success Of Silver Shield

Scheduled is "a full run-down on the extraordinary success of the Silver Shield technical training program, college short courses, the Silver Shield sales training program, and the new dealer management training program.

"The industry is going to do more and more and more during 1961 and the basic plan is going to be put together at the annual convention," Gurney said.

Advance registration, by mail, is one of the new features of the convention. It is designed to eliminate waiting at the registration desk.

The session on opening day, Nov. 14, will be a dealer-contractor sales and marketing forum. While this program will be aimed at the needs of the dealer, primarily, the session will be open to all segments of the industry.

Among those who will be participating on the program will be J. P. "Bucky" Field, chairman of the association's dealer training committee and vice president of The Williamson Co.

Dealer Management Training Program

Field and Fred Kammann, of Editorial Press Services, Cincinnati, who has been working with the association staff in preparation of the dealer management training program, will present in detail the latest association training program for dealer - contractors and other segments of the industry.

"Business management will be described in detail," it was noted, "including such matters as: (1) what your business aims to do—for your customers —for you; (2) management functions; the transactions that make up your business. Your sources of income; your costs; (3) pricing for profits—control of costs; (4) cost accounting—and methods of assigning your costs to recover all business expense, plus profit.

"(5) Finances—money in the business—and general accounting; (6) your business control statements; (7) marketing—getting business; producing income for your business and, hence, profits; (8) selling forces—both personal and impersonal; sales and advertising-promotion; (9) managing sales activities; getting prospects, planning sales work, and doing an effective selling job."

While the dealer - contractor sales forum is meeting, the three councils of the association made up of nearly 150 business executives from throughout America will be holding their annual conferences in separate meeting rooms.

These include the Research Advisory Council, chairmaned by Keith T. Davis, Bryant Mfg. Co.; the Application Engineering Council, headed by Dr. Lorin G. Miller, dean emeritus, Michigan State university; and the Marketing Council, which will review their activities in determining their recommendations for 1961.

These recommendations will be sent to the association's board of trustees, who will meet on Wednesday afternoon, Nov. 16 and Thursday, Nov. 17.

A 15-member Cleveland Committee will host those attending the convention at a social hour on Monday evening. Heading this group is Irv Seith, sales manager, Niagara Furnace Div., The Forest City Foundries, Cleveland.

On Tuesday, Nov. 15, the main convention session will deal with application engineering—how to take the vast amount of association research findings and use them in the design and installation of a ducted heating or cooling system.

Presiding at this session will be Don Winegardner, vice president of The Majestic Co., and first vice president of the association.

Some of those appearing at this full-day session will be Herbert T. Gilkey, director of technical services of NWAHACA together with Edward J. Brown, James Healy, and Boris Hryekewicz all of the association's research staff at the University of Illinois.

Marketing Session For Manufacturers

Also on Tuesday, a marketing session for manufacturer members of the session will be conducted by several of the industry's top experts on sales, promotion, advertising, selling, and market analysis.

Final session of the convention will be held on Wednesday, Nov. 16, when the association's annual business meeting will be held for voting members of the trade group. At this meeting, the election of new officers and members of the board of trustees will occur.

Tuesday noon, an open luncheon for all those attending the convention will be held. A nationally-recognized guest speaker will address this luncheon.

the Q's and A's of

AIR ENGINEERING

Q THE PROFESSION: *What is air engineering? What does it mean to you?*

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Q THE MAN: *Who is the Air Engineer? What does he do?*

A He is a member of an increasingly vital profession. He deals with problems of air. He is involved wherever combustion, chemical or mechanical processes or natural causes create smoke, dust, heat, cold, fumes or odors hazardous or annoying to personnel or the community or damaging to property or products. Air Engineers as a group are men of many titles. The Air Engineer may be any one of these . . .

- *an engineer or executive* in an industrial plant or commercial establishment, a utility or an institution in which his primary function is the handling and treatment of air.
- *an industrial hygienist* concerned with the reduction of airborne hazards to the health of personnel.
- *a registered consulting engineer or architect* concentrating on the problems of air in new or existing facilities.
- *a mechanical contractor* specializing in air handling installations.
- *a Government authority* cooperating with industry to effect compliance with codes and regulations governing the purification of air.

Q THE MAGAZINE: *How does it serve the profession?*

A *AIR ENGINEERING* is the *only* professional magazine dedicated to helping the Air Engineer fulfill his vitally important mission of creating pure air environment.

AIR ENGINEERING'S editorial objectives are, in brief: 1) to give readers up-to-date, practical working information useful in coping with air problems and 2) to bring together in closer communication fields and industries concerned with the handling and treatment of air.

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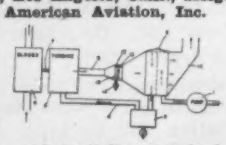
Publishers of "Air Conditioning, Heating & Refrigeration News"

PATENTS

Week of July 5 (Concluded)

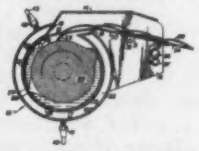
2,943,460. ICE PREVENTION IN AIR CONDITIONING SYSTEMS. Kenneth Brown, Los Angeles, Calif., assignor to North American Aviation, Inc.



1. A substantially constant discharge-temperature air expansion refrigeration device comprising means for expanding moisture-laden, high-pressure, high-temperature air to a lower pressure and a temperature below the freezing point of water; and means for automatically regulating the pressure drop across said expansion means to prevent the outlet air temperature from said expansion means from falling below the freezing point of water. . . .

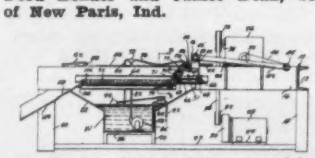
2,943,461. ICE MAKING MACHINE. Virgel A. Davis, 2005 W. Lotus, Fort Worth, Texas.

1. In an ice making machine, the combination of an evaporator having a horizontal cylindrical inner wall and having an ice discharge opening in the top and extending the length of said cylinder and said inner wall, a cylindrical rotor axially mounted in said evaporator and spaced from the



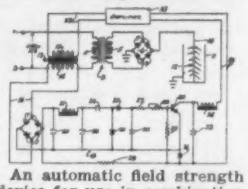
inner wall thereof, horizontal rigid scrapers projecting from said rotor and extending to said inner wall of said evaporator. . . .

2,943,462. ICE CHIPPING MACHINE. Raymond E. Wolferman, Milford, Ind., assignor of fifteen percent to Carl Ford Bender and Janice Dean, both of New Paris, Ind.



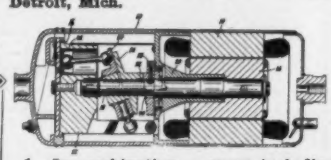
1. An ice chip machine comprising: a frame; an evaporator thereon including a tray having longitudinally extending corrugations forming alternating ribs and recesses, and means for refrigerating the tray; a knife assembly reciprocating on said tray in a path parallel to the several corrugations, said assembly having a shearing stroke and a return stroke when reciprocated, and including a knife in the form of a blade the length of which extends transversely of the several corrugations. . . .

2,943,697. AUTOMATIC FIELD STRENGTH CONTROL FOR PRECIPITATORS. Larry L. Little, Los Angeles, Calif., assignor, by mesne assignments, to Joy Mfg. Co., a corporation of Pennsylvania.



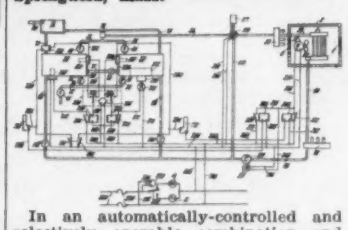
14. An automatic field strength control device for use in combination with an electrical precipitator wherein an electrical field is maintained between opposing electrodes by means of an A.-C. power source connected through a transformer and rectifier to said opposing electrodes, said control device comprising: a saturable reactor having a control winding being connected in series with the primary winding of said transformer; a filter-integrator circuit responsive to changes in the current flowing in said load winding to said transform primary, said filter-integrator circuit producing a continuous D.-C. output signal corresponding to the integral of transient changes in the current flowing through said load winding. . . .

2,943,782. REFRIGERATING APPARATUS. Ralph McGregor, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



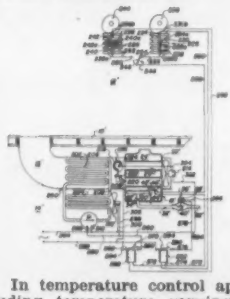
1. In combination, a pump including a drive shaft having an offset crank portion, a wobble plate assembly disposed on said crank portion, a cylinder block having a plurality of cylinders parallel to the axis of rotation of said shaft, piston means operating in said cylinders and driven by said wobble plate assembly, said assembly comprising a pair of relatively rotatable elements, means for securing one of said elements to said shaft, and means responsive to relative rotation of said elements for shifting the other of said elements axially on said shaft, said last named means comprising an inclined cam surface on one of said elements and a cam follower on the other of said elements slidably engaging said cam surface. . . .

2,943,842. HEATING AND/OR COOLING SYSTEM. Edward M. Sullivan, Springfield, Mass., assignor to Alfred W. Bettigole and Oscar H. Sternbane, Springfield, Mass.



In an automatically-controlled and selectively operable combination and alternating heating and cooling system for controlling the temperature of a space through which a fluid mass of a heat/cold exchange medium is circulated and based upon the storage of fluid masses being heated or cooled electrically during an off-peak period and being circulated as required comprising, a pair of storage chambers for simultaneous storage of portions of the fluid mass, an electric heater for heating a portion of the fluid mass and disposed within one of the storage chambers of said pair thereof, an electric cooler for cooling a portion of the fluid mass and disposed within the other of the storage chambers of said pair thereof, an air handling unit including a heat exchanger radiator and an electrically operated blower. . . .

2,943,843. TEMPERATURE CONTROL APPARATUS. Russell B. Matthews, Wauwatosa, Wis., assignor to Baso Inc., Milwaukee, Wis.



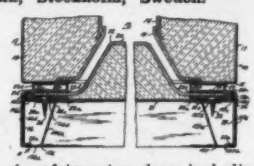
1. In temperature control apparatus including temperature varying means comprising heating and cooling means, said heating means comprising a main burner and an ignition burner therefor, fuel supply means for said main burner comprising electroresponsive control means energizable to afford fuel flow to said main burner and deenergizable to prevent fuel flow thereto, electrically driven fan means energizable to circulate the air at said temperature varying means, and operating means for said fan means including means responsive to either one of a predetermined high and a predetermined low temperature at said temperature varying means to effect energization of said fan means, the combination of, thermoelectrically powered control means comprising a thermoelectric generator subject to a flame at said ignition burner. . . .

DESIGNS

133,347. SPACE CONDITION RESPONSIVE INSTRUMENT. Henry Dreyfuss, South Pasadena, Calif., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

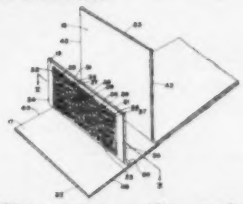
Week of July 12

2,944,304. REFRIGERATOR DOOR. Carl Louis Otto, New York, N. Y., and Borje Birger Gronqvist, Viggbyholm, Sweden, assignors to Aktiebolaget Electrolux, Stockholm, Sweden.



1. A refrigerator door including inner and outer wall members having an insulating medium therebetween, said outer wall member having a flange at its periphery which projects from the front face thereof, and an elongated trim strip which overlies said flange and conceals the latter from view, the longitudinal edge portions of said trim strip being bent and concealed from view, means for fastening said trim strip to said outer wall member, said fastening means cooperating with at least one of the bent longitudinal edge portions of said trim strip, said one longitudinal edge portion of said trim strip being bent back upon itself to form a groove disposed essentially in a plane passing through said flange, and an angle member having a pair of arms, one of said arms nesting in said groove and the other arm being fixed to the rear side of said outer wall member. . . .

2,944,328. METHOD OF MAKING HEAT EXCHANGER. Richard F. Adams, Alton, Ill., assignor to Olin Mathieson Chemical Corp., a corporation of Delaware.



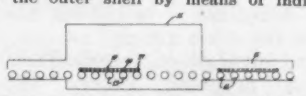
1. The pressure welding method of making a single sheet of metal having within its interior a voluminous thin-walled cavity of large expanse comprising superposing one upon the other at least three component sheets of metal consisting of two outer sheets and an interleaved sheet coextensive with the other sheets at least in the direct transverse to the direction of elongation under a reducing pressure, said sheets having between them a weld preventing material applied in an open grid-like pattern each of which is of coextensive superposed relationship with the other. . . .

2,944,337. METHOD OF FORMING FLEXIBLE TUBING. Bestor P. Coleman, Willow Springs, Ill., assignor to Acme Steel Co., Chicago, Ill.

1. The method of severing metal tubing formed by a helical winding of a metal strip so as to provide separate lengths of the tubing which comprises the steps of cutting a convolution of the winding transversely, and securing the respective cut ends of the said convolution to next adjacent unsevered parts of the tube by stitches extending parallel to the plane of the cut. . . .

2,944,339. METHOD OF BRAZING REFRIGERATOR EVAPORATORS. Ray A. Sandberg, Waukegan, Ill., assignor to Houdaille Industries, Inc., a corporation of Michigan.

1. The method of making a refrigerator evaporator which comprises superimposing an inner shell of flat sheet metal and an outer shell of sheet metal having outwardly embossed portions and flat planar portions with a layer of brazing material between the shells to form an assembly, moving said assembly into a heating chamber, applying downward forces on spaced transversely disposed portions of the outer shell by means of indi-

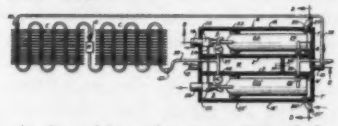


vidual separately and independently movable transversely disposed weights resting on the outer shell to press the flat planar portions of the outer shell toward mating portions of the inner shell while providing freedom for relative expansion and deflection of all portions of the shells during heating thereof. . . .

2,944,404. THERMOELECTRIC DEHUMIDIFYING APPARATUS. Robert W. Fritts, Elm Grove, Wis., assignor, by Mesne assignments, to Minnesota Mining & Mfg. Co., a corporation of Delaware.

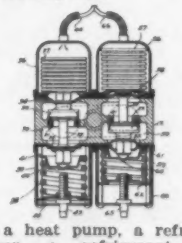
5. In a Peltier heat pump, a bank of first and second dissimilar thermoelements each having end portions and side portions, first and second thermojunction members interposed between and joined to the side portions of said first and second thermoelements to afford thermojunctions therebetween, and a layer of thermal insulation surroundingly disposed to the end portions of said thermoelements to prevent dissipation or absorption of heat thereat, said first thermojunction members extending outwardly through said insulation from one side only of said bank, and said second thermojunction members extending outwardly through said insulation from the opposite side only of said bank. . . .

2,944,407. REFRIGERATION AND HEATING APPARATUS OF THE ABSORPTION TYPE FOR USE ON INTERNAL COMBUSTION ENGINES INCLUDING A MUFFLER. Wendell W. Pettis, 1715 E. Cherry-Lynn Dr., Phoenix, Ariz.



1. In refrigeration apparatus of the absorption type having an evaporator and a condenser connected to said evaporator through an expansion valve, and means operated by heat for forcing methyl chloride, as a refrigerant gas, under pressure into said condenser and absorbing said gas from said evaporator after expansion in said evaporator, consisting of a first elongated boiler absorber hingedly supported at one end and resiliently supported at the other end, and approximately half filled with refined liquid petroleum, as an absorber, connected by an inlet pipe and through an inwardly opening check valve to said evaporator. . . .

2,944,408. WATER FLOW-REGULATING VALVE FOR A HEAT PUMP. Eldredge Willis, 218 E. Newell St., Winter Garden, Fla.



1. In a heat pump, a refrigeration compressor, a refrigerant conduit, means to selectively connect said conduit to the high pressure side or the low pressure side of the compressor, in accordance with operation of the heat pump for cooling or heating, a heat exchange water conduit, a dual water control valve in said heat exchange water conduit, said dual control valve comprising a body formed with a water inlet port and a water outlet port, a pair of valves mounted in said body between said inlet and outlet ports and being constructed and arranged to control communication therebetween. . . .

(To Be Continued)

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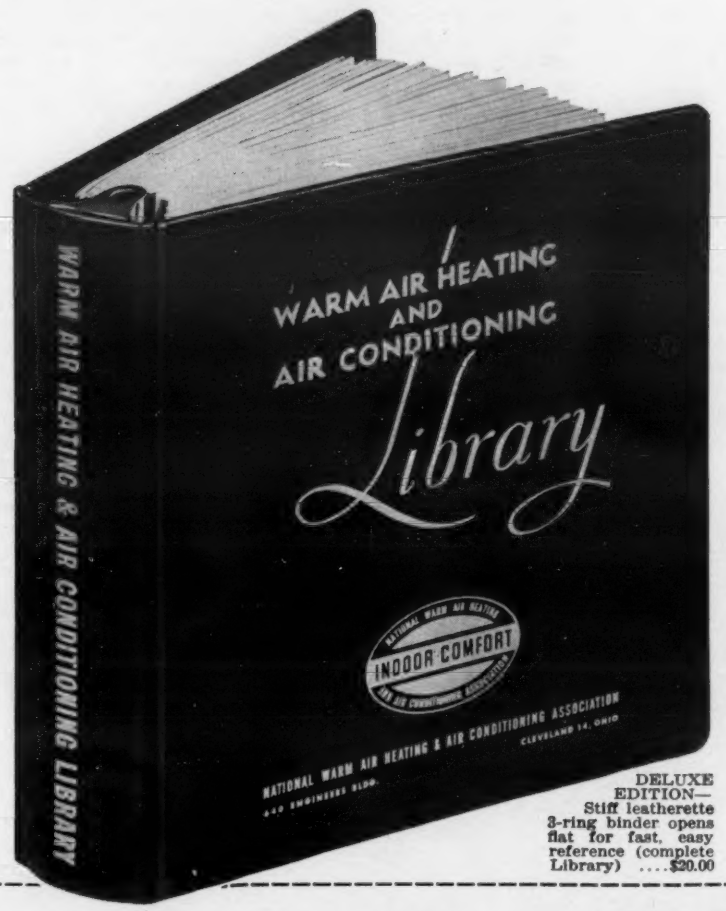
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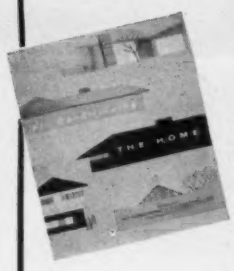

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Credit--

(Continued from Page 1, Col. 5)

privilege where it is not warranted, thereby suffering losses which are mostly avoidable," Biddle said.

"In a tight market such as exists today with construction capacities more than double the available business volume, recovering losses by figuring an increased percentage of overhead becomes almost impossible. Therefore losses of any kind may have to be charged against capital."

Until a considerable part of the industry becomes sufficiently interested to do something on a coordinated program, Biddle suggested that the individual contractor take some or all of the following steps:

1. You can subscribe to a construction credit service that provides an interchange of credit information.

2. You can turn in all your delinquent accounts to such an agency to be included in combination with reports from other firms selling in the field in a monthly credit bulletin.

3. You can refuse to grant the credit privilege to any individual or firm without disclosing any reason for so doing. You can also discontinue the credit privilege to any one at your will and pleasure.

4. You certainly owe it to your good customers who pay promptly not to give any better terms and conditions to any other customers.

5. If you discount your bills or pay promptly, you are entitled to the best terms and conditions which your source of supply has to give. If he is giving 60 to 90 or more days to any customer whatsoever and still is allowing a cash discount, you are equally entitled to it and can ask him to give it to you.

If your supplier allows another purchaser to buy goods and pay for them six months later without interest, that is your privilege also. We believe you have a right to know exactly what the seller is doing in this regard and he has a definite obligation to publish and strictly adhere to standard terms of sale.

If you are not being treated in this manner, you are being short-changed.

6. You have the exclusive right of choice in the spending of your dollars. Collectively you can force your will on all purveyors, provided you purchase on policy and have the necessary information to properly decide.

7. All that is needed is for every financially stable contractor to insist that those from whom he purchases—whether it be materials, equipment, or jobs —establish, publish, and adhere to standards terms of sale including both a discount limitation date and a delinquency date, beyond which sales for cash in advance only will be honored.

8. You should also insist that those from whom you purchase subscribe to a reliable credit reporting agency, report to the agency all accounts that become delinquent under his terms of sale, and arrange for a periodic inspection of his books and records to determine whether he is adhering to his established terms of sale to all purchasers, with authority to let the inspection service make public any deviations.

9. You, the purchaser, should voluntarily and upon your own initiative make all your purchasers from those sellers who do adhere to this or a similar plan and are able to provide assurance that they are so doing.

10. You should refuse any blandishments from any seller who does not publish and adhere to standard terms of sale.

Biddle said he doubted that the Federal Government can take objection to the plan, provided there is no agreement on the part of anyone as to policy or method of enforcement.

Biddle recalled that during the late 1920's, the electrical contractors of Detroit established such a concerted program. From it they derived the following benefits:

1. A sharp reduction in the number of electrical contractors as the poor credit risks were eliminated. This helped the "good" contractors in two ways: (a) they no longer were paying for the wholesalers' credit losses, and (b) they no longer lost jobs to these subsidized contractors.

2. The electrical contractor became the best collector in the building trades as customers respected the fact that the electrical supply bills had to be paid if the contractor was to be available to do any more work. Many slow pay contractors became bill discounters.

3. Job quality and volume improved because contractors stopped trying to sell items out of a job to further cheapen prices. Instead they started to upgrade their jobs and sell quality and service.

4. Electrical wholesalers collected well over a quarter of a million dollars in past due receivables the first year of the plan's operation. A lot of their customers became discounters while practically all the rest became prompt payers. Unit orders jumped to very substantial amounts and some large contractors ceased buying direct from manufacturers and began buying locally.

It took the great depression of the 30's to bring this plan to an end, Biddle said.

W. C. Schuknecht

F. C. Shafer

Imperial-Eastman--

(Continued from Page 1, Col. 2)

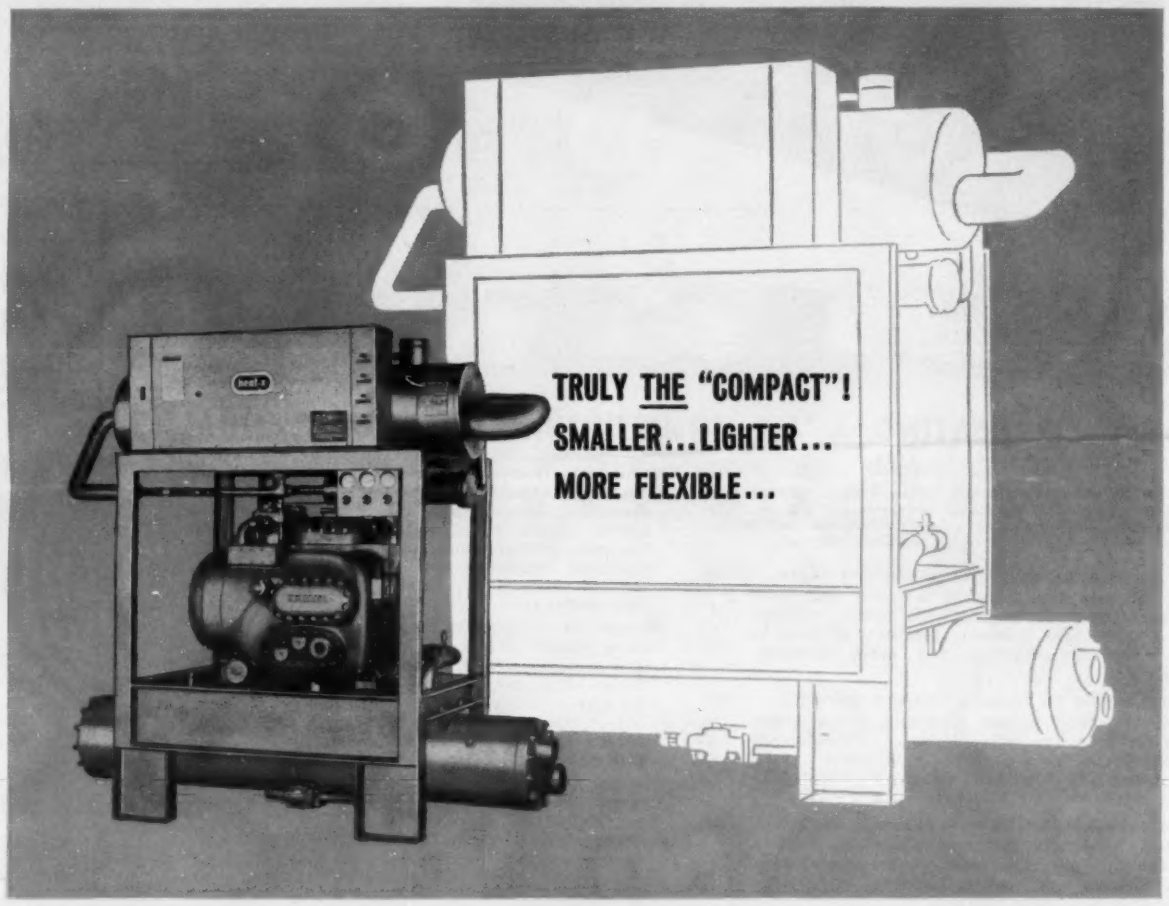
continue as vice presidents. F. G. Harris will be secretary - treasurer and M. J. Soberg, controller.

W. C. Musham

From Eastman, M. W. Brose and G. N. Jagemann will continue as vice presidents.

General office of the corporation will be at 6300 W. Howard St. here.

Recently, Imperial Brass organized a wholly-owned subsidiary in Canada, with headquarters in Toronto. Called Imperial Brass Mfg. Co. of Canada, Ltd., it has started manufacturing operations and, in the near future, will build a new plant at Barrie, Ont.



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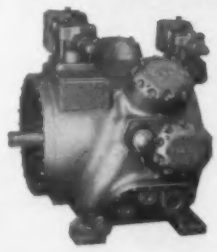

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